Chemical Week

March 8, 1952 Price 35 cents

Synthetic fibers: On the mark—X-51; set for expansion—dynel; going—Acrilan, Orlon . . . . p. 9

Drug makers look Far-Eastward; in view: more exports, on-the-spot plants . . . . . p. 41

Quality floor wax at low cost; that's the push behind oxidized microcrystalline wax's rise . p. 45

You won't have to wait long for resorcinol; military demand slackens, output climbs . . p. 53

Hoffmann-La Roche's Fox: New TB "cures" are promising, but require further trials . . . . p. 21

A McGRAW-HILL PUB

1 Fact to Remember

WHETHER SUPPLY IS LONG OR SHORT...

Westvaco® CHEMICALS

is the Only integrated producer of all these industrial chemicals

CAUSTIC SODA

Liquid 50% Standard and Rayon Grades
Liquid 70-73% Standard Grade, Flake and Solid

CAUSTIC POTASH

45% Liquid, Flake and Solid

NATURAL SODA ASH

Light and Dense

Crude Sodium Sesquicarbonate
Phosphated Caustic Soda
Acid Sodium Pyrophosphate
Chlorinated Sodium Phosphate
Disodium Phosphate
Dipotassium Phosphate
Monosodium Phosphate
Monopotassium Phosphate
Sodium Tripolyphosphate
Potassium Phosphate Liquor
Tetrasodium Pyrophosphate
Tetrapotassium Pyrophosphate
Tripotassium Phosphate

Other Chemicals: Barium Peroxide, Blanc Fixe (Barium Sulphate), Carbon Bisulfide, Carbon Tetrachloride, Fire Extinguisher Fluid, Hydrogen Peroxide, Magnesium Chloride, Sodium Sulfide.

A contract for chemicals can never be better than the plant capacity and raw materials control behind it!

With basic, growing alkali and elemental Phosphorus production, Westvaco can give you the quality and service you need to keep production flowing smoothly. The record of recent years is ample evidence of how our plants perform

When you order any of the chemicals listed here from Westvaco, you'll get "delivery as promised" from nearby plants—plus the friendly interest of men who can give you a prompt, concise answer on your alkali, phosphate or other chemical needs.

Contract or spot, it pays to call Westvaco first.

WESTVACO CHEMICAL DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
161 EAST 42nd STREET, NEW YORK 17, N. Y.
CHICAGO, ILL. • CLEVELAND, OHIO • CINCINNATI, OHIO • CHARLOTTE, N. C.
ST. LOUIS, MO. • POCATELLO, IDAHO • LOS ANGELES, CALIF. • NEWARK, CALIF.

fmc

Chemical Week

Volume 70 Number 10

March 8, 1952

OPINION	2
NEWSLETTER	7
BUSINESS & INDUSTRY	9
RESEARCH	21
DISTRIBUTION	41
PRODUCTION	31
BOOKS	44
SPECIALTIES	45
MARKETS	49
BOOKLETS	56

PUBLISHER ..... Wallace F. Traendly
EDITORIAL DIRECTOR .... S. D. Kirkpatrick
EDITOR ..... W. Alec Jordan
MANAGING EDITOR .. Howard C. E. Johnson

ASSOCIATE EDITOR: John J. Craig. ASSISTANT EDITORS: Donald P. Burke, Joseph Gordon, Dennis J. Lynds, William Olcott, Ralph R. Schulz. REGIONAL EDITORS: Frank C. Byrnes, Chicago; John Kent, Washington; James A. Lee, Houston; Elliot Schrier, San Francisco. ART EDITOR: Woodfin G. Mizell, Jr. EDITORIAL ASSISTANTS: Claire Baker, Leona Mahler, DOMESTIC AND FOREIGN NEWS SERVICE: McGraw-Hill Bureaus in principal cities of the U. S. and throughout the world. CONSULTING EDITORS: Lawrence W. Bass, Benjamin T. Brooks, John V. N. Dorr, Charles R. Downs, Ernest W. Reid, Norman A. Shepard, Roland P. Soule, Robert L. Taylor. BUSINESS STAFF & REGIONAL OFFICES: See page facing back cover.

Chemical Week (including Chemical Specialties, and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **Publication Office: 1309 Noble St., Philadelphia 23, Pa.**

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to J. E. Blackburn, Jr., Director of Circulation. Allow ten days for change of address.

Single copies 35¢. Subscription rates—United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 a year; $10.00 for two years; $12.00 for three years. Pan American countries $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $25.00 a year; $40.00 for two years; $50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1952 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.

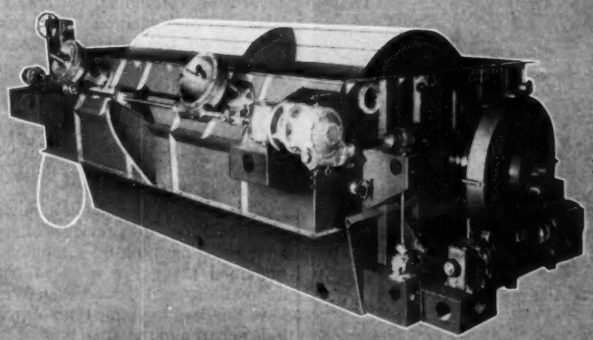
FASTER FILTRATION—
CLEANER FILTRATE
WITH EIMCO PRECOAT FILTERS

Eimco Precoat Filters are being used with outstanding success in many industries when solutions carry fine particles in suspension or where the solids are of a sticky or gummy nature.

All colloidal matter is removed from the solution and the precoat media is shaved clean each revolution. These Eimco filters are especially suited for the petroleum, food, chemical, antibiotics and allied fields.

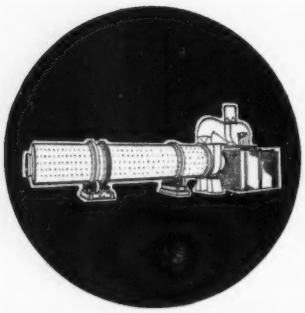
Eimco Precoat Filters are available in a wide range of sizes and in many materials of construction depending on the nature of the material to be filtered.

Open type, vapor tight and pressure tight models are all available. Write for specifications and details on Eimco Precoat Filters.

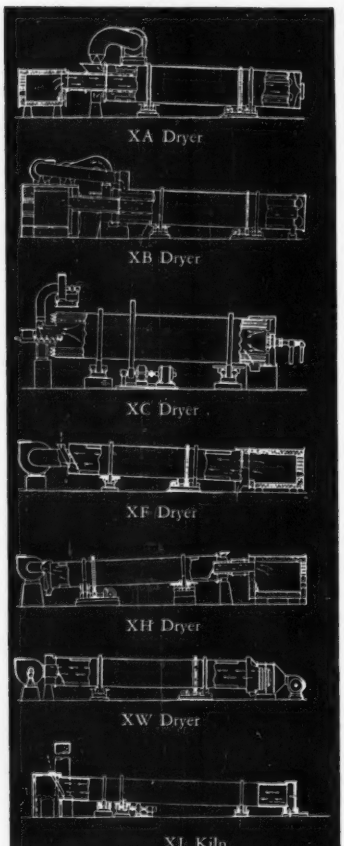


EIMCO

THE EIMCO CORPORATION
The World's Largest Manufacturers of Underground Rock Loading Machines
EXECUTIVE OFFICES AND FACTORIES — SALT LAKE CITY 10, UTAH, U. S. A.
BRANCH SALES AND SERVICE OFFICES:
NEW YORK, 51-52 SOUTH STREET • CHICAGO, 3319 SOUTH WALLACE STREET
BIRMINGHAM, ALA., 3140 FAYETTE AVE. • DULUTH, MINN., 216 E. SUPERIOR ST.
EL PASO, TEXAS, MILLS BUILDING • BERKELEY, CALIFORNIA, P. O. BOX 240
KELLOGG, IDAHO, 307 DIVISION ST. • LONDON W. 1, ENGLAND, 190 PICCADILLY
IN FRANCE: SOCIETE EIMCO, PARIS, FRANCE
IN ENGLAND: EIMCO (GREAT BRITAIN) LTD., LEEDS 12, ENGLAND
AGENTS IN ALL PRINCIPAL CITIES THROUGHOUT THE WORLD



Ruggles-Coles
ROTARY DRYERS
in 7 types . . .



Write Hardinge for Bulletin 16-D-36 which describes the entire line of Ruggles-Coles Rotary Dryers, Kilns and Coolers.

HARDINGE
COMPANY INCORPORATED
YORK, PENNSYLVANIA—240 Arch St. Main Office and Works
NEW YORK 17 • SAN FRANCISCO 11 • CHICAGO 6 • HIBBING, MINN. • TORONTO 1
122 E. 42nd St. 24 California St. 205 W. Wacker Dr. 2016 First Ave. 200 Bay St.

OPINION . . . . .

Fungus Control

To THE EDITOR: . . . I would like to compliment you on your report "Chemicals for Fungus Control" (Jan. 26). . . . It was an interesting article.

E. M. FETTES
Manager
Research & Development
Thiokol Corp.
Trenton, N. J.

Stearate, Not Acetate

To THE EDITOR: We appreciate the fact that Mallinckrodt's Pyridose* was included in S. S. Block's article entitled "Chemicals for Fungus Control" (Jan. 26). . . . However, we should like to correct one statement.

Pyridose is a formulation containing pyridylmercuric acetate and not pyridylmercuric stearate. While Pyridose is highly water-soluble as the article stated, pyridylmercuric stearate is insoluble in water.

P. A. KRUEGER
Manager
Product Development Division
Mallinckrodt Chemical Works
St. Louis, Mo.

Men, Not Mice

To THE EDITOR: We have read with a great deal of interest your report "Firm, Round, Packed" on cigarette advertising, (March 1). You make reference to the "eyebrows" which have been raised by certification to facts over the name of laboratories in Lucky Strike advertisements. We believe that the factor which generates most of the skepticism and disbelief is that "Lucky Strikes" happen to be cigarettes, rather than men's garters or floor wax.

Exaggerated statements and misrepresentation in previous cigarette advertising has built up a genuine and ingrained skepticism in most people as to all cigarette advertising. We believe that had the same type of quality index chart and the same type of statement been used in the same kind of advertising of, let us say, nationally-known and advertised men's garters, few persons would have gone in for the "rugged skepticism and brutal disbelief" to which you refer.

It is unfortunate that the limitations of television and other advertising space do not permit a detailing of the factors and methods which are used for control of cigarette quality. No one likes long commercials. In accordance with our established policy of many years standing, anyone who has inquired has received full information as to the basis of quality evaluation. A booklet offered on television . . . amplified that. You have very kindly given space to further clarification of the control factors.

We believe that the better known the basis of judgment becomes, the clearer it will be . . . that LS maintain more uniform quality across the board. That doesn't mean that everyone will buy LS, merely that if they do they have greater assurance of getting the same cigarettes in each package as in prior packages.

No one, particularly a chemist, would deny that quality of workmanship is an important part of total quality. If not, why all the "specs" which our profession has written for practically everything from abalone to zymase? If good workmanship, which includes uniformity, is not worth achieving, then we—the chemists of the nation—have perpetrated a pretty bad fraud on those industries who employ us to set up standards and control their products. Let's assume, for the sake of this discussion, LS tobacco is as good as but no better than the tobacco in competing brands. Does it not follow that the best-made cigarette is first in quality?

There are no published standards for cigarette quality. We believe, however, that if a disinterested committee on cigarette standards were asked to set up specifications, they would come to the same conclusions that we did, taking into account all of the known factors which affect combustion and influence the composition and taste of cigarette smoke.

We suspect that every cigarette manufacturer is well acquainted with them for they show varying degrees of proficiency which are characteristic of individual brands. Some are consistently better than others. Not all of the factors relate to uniformity. Several of them are measurements of those things which everyone agrees should be at a minimum in a pack of cigarettes.

People smoke different brands for a variety of reasons. Even with all the facts, their comments might be something like these: one might say "I prefer CX and even if it does have more stems, I still prefer it"; another, "I have got used to the taste of CY and I won't change because of a few more light or dry cigarettes"; or a third, "I have been smoking PX for a long time. I treat my cigarettes rough and they will probably have loose ends anyway when I smoke them"; a fourth, "All brands taste

* Reg. U.S. Pat. Off.

SOLKA®-FLOC

"First Aid" for Filters

In any filtration emergency, SOLKA-FLOC may be just the filter aid you need. Here's why:

- **SOLKA-FLOC** can prevent abrasion damage in your filtration processes
- **SOLKA-FLOC** can eliminate costly "leak-through"—quickly and safely
- **SOLKA-FLOC** often enables unusually high flow rates
- **SOLKA-FLOC** permits controlled porosity in the filter cake
- **SOLKA-FLOC** saves labor since filters do not have to be cleaned so often

These are only a few of the reasons why SOLKA-FLOC may reduce your filtration problems. Why not find out more about its use as a filter aid? Write our Technical Service, Department CF-3, at Boston, describing your filtration system.

BROWN QUALITY COMPANY, Berlin, New Hampshire
CORPORATION, La Tuque, Quebec

General Sales Offices: 150 Causeway Street, Boston 14, Mass.
Dominion Square Building, Montreal, Quebec

SOLKA & CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS • NIBROC KOWTOWLS • BERMICO SEWER PIPE, CONDUIT & CORES • ONCO INSOLES • CHEMICALS

Gersthofen Waxes

Former I. G. Waxes

For Self-Polishing Floor Wax

...Paste Wax

...Carbon Paper

...All Other Applications

ALWAYS UNIFORM CHEMICAL PROPERTIES

LOW PRICES • HIGH QUALITY • NO ADULTERATIONS

CONTINUOUS DELIVERIES ASSURED

DIRECT IMPORTERS

Crude and Refined

CARNAUBA OURICURY CANDELILLA MONTAN BEESWAX

Sole Importers and Distributors for U. S. A. and Canada

WAX & ROSIN PRODUCTS

42 BROADWAY NEW YORK 4, N. Y.

Pollution Abaters Crack Down

Although it isn't making headlines, the Federal water pollution abatement fight is continuing. In an exclusive interview last week, Carl E. Schwob, chief of the Division of Water Pollution Control, U.S. Public Health Service, told Chemical Week that Federal efforts to abate pollution of the nation's streams will proceed from mere fact-finding and gathering to the "practical"

Kick-off for the enforc will be the publicati February of th "summary

Under the law the first opportunit If they do no er

WINTHROP-STEARNS

Phenols constitute a major source of water pollution. For rapid and precise determination of phenols in waste water most analysts prefer

4-AMINO ANTIPYRINE

SPECIAL CHEMICALS DIVISION Winthrop-Stearns INC.

1450 BROADWAY, NEW YORK 18, N. Y.

OPINION . . . . . .

pretty much the same to me and I like the GY announcer. The amount of dust, more or less, doesn't worry me."

In this country anybody can buy the product or brand he wants to, and for his own special reasons. That, thank Heaven, is the kind of country we live in.

But we are not crusading, we are defining a policy. We have found that our client's cigarette is the best made. Shall we say "If you made tractors, or cucumber pickles, we would go all the way, but since you are a cigarette manufacturer, we will go only part of the way"? Not as we see it. We feel that in simple justice to our clients we should treat them all alike, and having established a fact, we should be willing to so state to one person, or a thousand, or a million. If we didn't, we would be mice rather than men.

FOSTER DEE SNELL
President
Foster D. Snell, Inc.
New York, N. Y.

Chemical of the Year

TO THE EDITOR: . . . It seems to me that a good many magazines follow the practice of selecting a "Man of the Year" . . . and I wonder if it would not be a good idea for CW to do something similar. . . .

You could, for instance, select the "Men of the Year" . . . those who were outstanding in Research, Production, Marketing, Corporate Financing, etc. . . .

R. L. ANTHONY
Milwaukee, Wis.

That's an idea we have mulled over, Reader Anthony, but decided not to pursue—mainly because, as you say, a number of magazines do something rather similar. We did, however, select "the chemical development which would have the greatest impact upon our industries during 1952." Our nomination: benzene synthesis.

The selection, not mentioned in CW, was dramatized early in January on the radio program in which McGraw-Hill editors participate (The Great Adventure, Sunday, 7:30 p.m. EST, ABC network). Other subjects presented on more recent programs: antibiotics, synthetic detergents—ED.

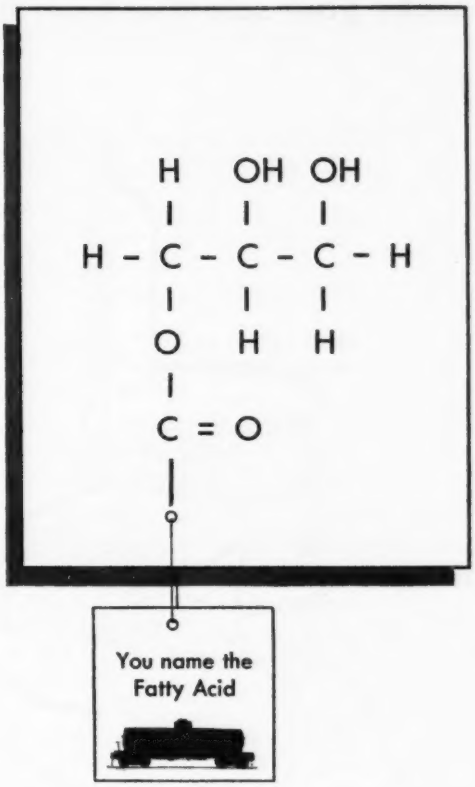
CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: The Editor, Chemical Week, 330 W. 42nd St., New York 36, N. Y.

90% monoesters

now available in tank car lots

tailored to your need



MONOGLYCERIDES produced by DPi contain better than 90% of active material. They are odor-free, soap-free, and catalyst-free.

CHEMICALLY, these "activated fats" consist of glycerine with two reactive hydroxyls and an aliphatic chain of any length from C_{12} to C_{18}. *Physically*, monoglycerides lower the interfacial tension of oil and water in proportion to monoester content.

Available now, in drum or carload quantities, are DPi 90% monoglycerides of *cottonseed oil* and of *lard*. We also produce monoglycerides of *soybean oil* consisting of glyceryl monolinoleate, glyceryl monooleate, and glyceryl monolinolenate; monoglycerides from various *greases and tallows;* glyceryl monostearate from various types of *stearic acid;* glyceryl monoricinoleate from *castor oil;* and the monoglycerides of *coconut oil* and *peanut oil*.

OR, we can produce high purity "monos" from other fatty raw materials, too (perhaps from your by-products), in any quantity you desire.

We will welcome an opportunity to discuss your qualitative and quantitative needs for monoglyceride materials or to send you test samples of some we have produced.

Write, wire, or phone ***Distillation Products Industries,*** 789 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company). Sales offices: New York and Chicago • W. M. Gillies & Co., Los Angeles and San Francisco • Charles Albert Smith Ltd., Montreal and Toronto.

Can **90% "monos"** improve your specialty?

The high purity of DPi monoglycerides suggests their possible use in improving stability, texture, or appearance for such products as these:

lubricating greases and oils
polishes and buffing compounds
rubber products
waterproofing and water-repellent compositions
alkyd resins
soaps
synthetic surface-active agents

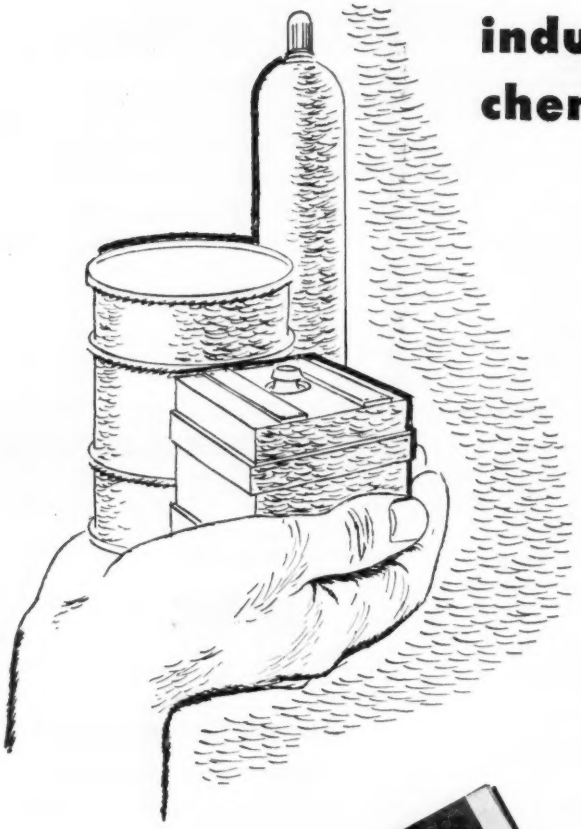
DPi

distillers of monoglycerides from natural fats and oils

Also . . . vitamins A and E . . . high vacuum equipment . . . more than 3500 Eastman Organic Chemicals for science and industry

make your selection from these HARSHAW

industrial chemicals



- Electroplating Salts, Anodes and Processes
- Driers and Metal Soaps
- Ceramic Opacifiers and Colors
- Fluorides
- Preformed Catalysts, Catalytic Chemicals
- Glycerine
- Synthetic Optical Crystals
- Agricultural Chemicals
- Fungicides
- Chemical Commodities

Send for
this 32-page book—lists all the chemicals available thru The Harshaw Chemical Co.

THE HARSHAW CHEMICAL CO.
1949 EAST 97th ST. CLEVELAND 6, OHIO
BRANCHES IN PRINCIPAL CITIES

Chemical Week

BUSINESS MAGAZINE OF THE CHEMICAL PROCESS INDUSTRIES

NEWSLETTER

You can expect more and more decontrol this year, if Secretary of Commerce Sawyer's recent speeches can be taken as straws in the wind.

Sawyer's point is that we must maintain a "guns and butter" economy; and since the "guns" program will be stretched out longer—with a proportionally lower monthly take of materials and services, more will be allowed to flow into the "butter" industries.

The obvious election-year goal of this thinking: full employment, as few dislocations as possible.

What it means to the chemical process industries: sustained demand. What defense doesn't take will be channeled to civilian end-uses. Some decontrol is necessary to accomplish that objective.

Steel is a case in point. The chemical industry is getting 5,000 tons more structural steel during the second quarter than in the first (37,951 tons vs. 32,733).

Rubber gets 2,805 tons; pulp and paperboard, 5,154 tons; textiles (including synthetics), 7,852 tons.

The total allocation for industrial expansion and commercial construction is 284,972 tons—including 70,000 tons that President Truman wrung out of inflated Defense Department requests.

Says NPA's Fowler, structural steel is tight for the present and "immediate future," but it will likely ease later this year.

Don't be surprised if American Cyanamid splits its stock 2 for 1. The Board of Directors has recommended increasing authorized common stock from 5 million shares ($10 par) to 12 million ($10 par).

Hinted at is the possibility that a stock dividend will be declared—one share for each share outstanding. The remainder would be reserved for exchange of convertible preferred stock.

Such move would provide more flexible trading. The stock now sells in the $110-$115 range—beyond the small investor's means.

Chemicals sweetened Standard Oil of Indiana's profit kitty last year. Bucking an all-too-prevalent trend, Standard's net rose from $123.6 million to $148.7 million on sales of $1,303 million and $1,539 million, respectively—despite a tax jump from $54 million to $92 million.

Dollar value of chemical sales skyrocketed 122%, and Board Chairman R. E. Wilson says, "Making more chemical products will help counteract taxes and costs."

Backing that up are Standard's plans to make more benzene at Whiting and Texas City; octyl, nonyl and higher alcohols at Wood River; detergent base at Whiting; chemicals at Brownsville; lube oil additives.

If you don't mind paying 40¢ a gallon, you can get fluoridized (1 p.p.m.) water in Chicago. A local enterpriser has been bottling and pasteurizing a natural mineral water for some time, is now capitalizing on current fluoride publicity to boost sales. The fluoride has always been there, but now there's reason to mention it.

NEWSLETTER

Here's another financial move by American Cyanamid: The company last week received the first installment of a $75 million loan through White Weld & Co. from a group of institutional investors. Interest rate is 3¾%, and the loan matures in 1987.

Proceeds will be added to general corporate funds for working capital and possible expansions—chief among which is the $48 million acrylonitrile plant slated for Louisiana.

"Blue-chip" chemical stocks have lost some blueness in a sluggish market. One recent chemical issue was oversubscribed by brokers, but the public didn't display the same eagerness to buy.

Result: The brokers are stuck with a lot of shares in a depressed market—and their losses may run high.

Higher sales and lower net. That's Victor Chemical Works' story for 1951. Sales rose almost 15%, to $32.7 million; taxes went up 21%, to $4.3 million; and net profit declined 23%, to $2.88 million.

Nevertheless, the research budget was up 58%; a new phosphorus furnace was completed, and a second is being built; and new processing facilities will be finished this year to provide additional phosphate capacity —all of which add up to a solid foundation for future sales.

Kaiser Aluminum & Chemical Corp. is strengthening its chemical position through working agreements with other chemical makers.

It has just signed a deal with General Chemical Division whereby Kaiser will supply fluorspar and alumina, General will manufacture aluminum fluoride (used as a flux in aluminum production) in a $2½ million plant at General's Bay Point Works (near San Francisco). First unit will go on stream next January, will turn out 15,000 tons a year.

Kaiser has also been talking a deal with a Gulf Coast chemical firm which wants chlorine; Kaiser wants caustic. Likely upshot is a joint chlorine-caustic plant.

Food, drug and cosmetic makers in seven Western states needn't allow FDA inspectors in their plants.

That's FDA Commissioner Crawford's interpretation of a recent U. S. Court of Appeals decision, which held that sections of the Food and Drug Act are at least ambiguous if not contradictory.

FDA is excited, will appeal to the Supreme Court. If the lower court is upheld, enforcement would be hampered throughout the nation; and to avoid this Congress will be asked to put teeth into the law.

But before you lock the door, listen again to Commissioner Crawford: "Even without legal compulsion it is presumed that manufacturers who are doing an honest job would not keep our inspectors out. . . ."

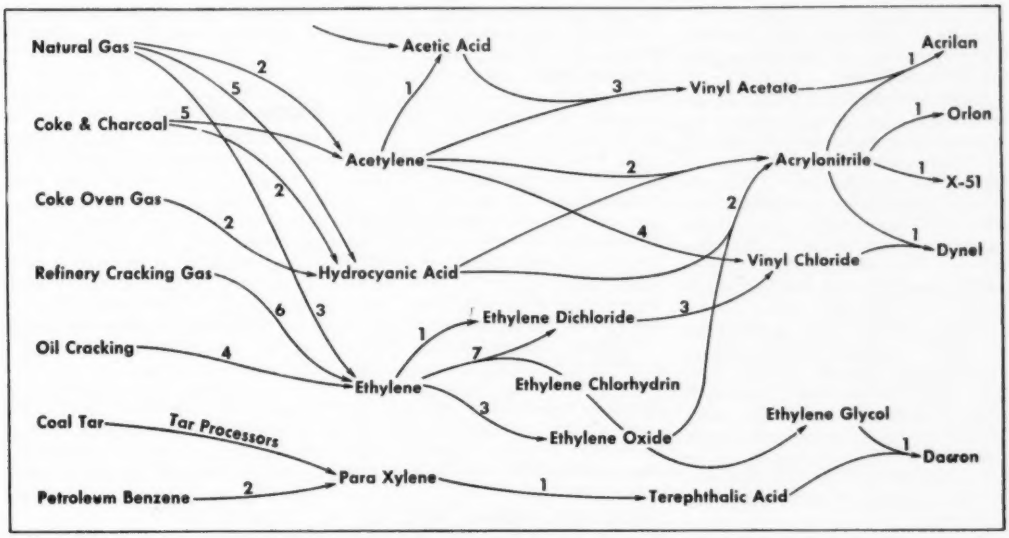
Chemical makers in the Ohio Valley are busily conning the joint Federal-State pollution report released this week.

The bad news: 1,082 municipalities and 680 industrial plants need treatment facilities. Of 86 chemical plants, 30 are okay, another 30 have no facilities whatsoever, the remainder are "undetermined."

Contrary to some reports, Carbide and Carbon Chemicals Co. is not yet producing acrylonitrile, is buying its present needs. When facilities at Institute, W. Va., are completed, the company will be self-sufficient in this intermediate.

. . . The Editors

BUSINESS & INDUSTRY . . . . .



FIBER GENEALOGY: A prolific family of interested parties.*

Blends Boom Fiber Future

Synthetic fibers are in the news this week with Cyanamid's unveiling of its X-51 acrylic and Carbide's detailing a $30 million dynel expansion.

Thirty million pound/year plants will come onstream by June for Chemstrand's Acrilan and Du Pont's Orlon.

Synthetics' future is tied to blends; reason: mixtures bring out the best in both natural and synthetic fibers.

The synthetic fiber field was never more dynamic than during the past few days. In the headlines are a new fiber, a new expansion, and two plants scheduled for early completion.

• **New Fiber—X-51.** American Cyanamid, long an important factor in the textile chemical and dye field, this week pulled the wraps off its long-heralded acrylic fiber.

The fiber, slightly bluish-white in staple and yellowish-white in filament form, is being produced in pilot-plant quantities at Cyanamid's Stamford, Conn., laboratories. While it generally exhibits the properties of other acrylics, the fiber can be dyed with usual techniques at normal dyehouse processing temperatures and with several types of dyes. Other advantages include a greater bulkiness than current synthetics. (Oft-rumored, as forthcoming, however, is type B Orlon, with better bulking properties.)

Of course, acceptance by the trade will determine whether X-51 goes commercial.

• **New Plant—Dynel.** Carbide and Carbon Chemicals meanwhile took the wraps off its plans for a 20-million pound-per-year dynel plant at Spray, N.C. Final engineering work for the plant, which would cost about $30 million, is now going on. The company has applied for a tax amortization certificate on the facilities, primarily as an aid in obtaining materials.

This, however, may be more easily said than done. Because of pressure from wool and cotton producers, a favorable report on synthetics was sidetracked within the Defense Production Agency. Now it has blossomed again, and is making its way back up "channels." Decision will have to be made at the Wilson-Truman level.

No amortization certificates for synthetics have been issued since March, 1951, and the current textile slump has given more power to arguments of natural fiber blocs seeking to lessen "competition."

Carbide, however, will go ahead if and when it can get assurances of materials (e.g., stainless steel).

• **New Production—Acrilan, Orlon.** Two fibers which are about to emerge from the pilot-plant cocoon: Du Pont's Orlon staple, and Acrilan from Chemstrand, joint subsidiary of American Viscose and Monsanto.

While capacity of each plant is estimated at 30 million pounds per year, initial production will be small, and gradually will increase towards that figure.

Chemstrand expects that within the next two years, 20% of its output will go to knit goods, the rest to woven fabrics. In each case, 85% to 95% of the finished products will be in blends. The company does not expect to emphasize industrial uses during the two-year period.

* Numbers tell how many manufacturers are using or planning to use each process.

On Orlon, Du Pont officials reveal that their thinking as to end uses has switched since first introduction of the fiber. Originally, industrial uses were to be stressed, but some of the results obtained by weavers who were given fiber samples made the consumer sales outlook a rosier one. The company, while playing close to its chest on its distribution, does say that the greater share of production goes to consumer.

Dynel Distribution: Carbide, on the other hand, has shown its hand on where dynel goes—about half and half to apparel and non-apparel uses. In non-apparel classifications, 10% of total production goes to blankets, another 10% to industrial pile fabrics (such as paint rollers), and 5% apiece to filter fabrics, uniforms, comforters, draperies, and novelties (such as doll hair and chignons).

A total of 20% of production goes to woven clothing blends—divided approximately equally between cotton-, rayon- and acetate-, and wool-dynel blends and fleeces and piles; 10% apiece to men's hose and to pile fabrics, and 5% to underwear. The remaining 10% goes to Canadian and foreign sales and to new product development.

Consumer Reaction: In general, the buying public likes synthetics, but some textile men are slightly worried about the reaction to having so many of 'em. Said J. B. Goldberg of J. P. Stevens & Co.: "'Wonder fibers' is certainly more appropriate than 'miracle fibers,' since the poor consumer wonders what is coming next, wonders what it is made of and wonders how he will be benefited."

It stands to reason that the fibers "in there fustest" will have "mostest" opportunity to expand. The time that it takes to bring a fiber plant to commercial volume has become too long to encourage the introduction of fibers which do not have a distinct commercial advantage over those in production.

Who's Who: Despite the rather formidable competition now in the field, research is continuing at breakneck speed. Present fiber manufacturers are, of course, working both to improve their products and on new developments. One example is Carbide, which is working on a "first cousin" to dynel with a higher melting point. This would increase possible uses since it would allow higher ironing temperatures.

Acrylic-based fibers have been the subject of many of the investigations into synthetics. Among those who have worked in this field are Allied Chemical & Dye, Celanese, Industrial Rayon, Tennessee Eastman and Goodrich. Allied's reason: diversification into another chemical field. Celanese, Industrial Rayon and Eastman have their feet in the door through present work on fibers. Goodrich would naturally be interested from its background in acrylic polymers.

Much of the research on acrylic fibers stems from the fact that in order to be dyeable, acrylonitrile must be polymerized with some other material. Even the all-acrylics are not 100% acrylonitrile.

Du Pont, for example, uses vinyl pyridine as a raw material in Orlon manufacture. Chemstrand will use both vinyl pyridine and vinyl acetate in production of Acrilan. These may or may not be the sole copolymerizing agents used. As of now, there are no reports circulating as to what Cyanamid uses in making X-51.

Problems Ahead: Dyeing is the main obstacle which faces the synthetic industry, but those connected with fiber development point out that when almost any fiber—nylon for example—was introduced, dyeing problems resulted. Each, so far, has been surmounted.

Some new problems have arisen with the use of synthetics in blends. If an even color is wanted, dyes suitable for each fiber must be interbalanced. It is impossible to do this for some color shades, but this has presented another solution. The wool in, say, a Dacron-wool blend is dyed brown, giving a variegated overall color combining both brown and white.

Another drawback to synthetics has been the fact that they collect static electric charges. Every company is working on solutions to this problem, but as yet one of the best is the blending of synthetics and natural fibers.

Each type of fiber has its own unique advantages, and despite the ranting and raving from wool producers (*CW, July 21, '51*), useful applications for wool will be extended by the development of synthetics.

Growth Potential: Estimates of synthetic fiber growth show a natural divergence in exact figures, due both to differences in estimating techniques and bases.

Carbide estimates that by 1954, acrylic staple production will be close to 100 million pounds per year. This figure, of course, does not include polyamide nylon nor polyester Dacron.

Again, on only the acrylics, Texas Company's W. E. Kuhn and J. W. Hutcheson forecast (*CW, Sept. 29, '51*) a 1962 production of 350 million pounds.

Chemstrand's Frank Soday, figuring in acrylics, polyamides and polyesters, quotes production of 400 million in 1953, 500 million in 1958 and 750 million in 1960.

There is no argument, however, that synthetic fibers will become far more important to the chemical industry not only as products, but also as a market both for raw materials and for processing chemicals.

Face Lifting

Manufacturers with chemical price contracts which are dependent on Government price indices this week were looking over the U.S. Bureau of Labor Statistics' new wholesale price indicators.

And not only has the over-all price figure shifted to a new base period, but coverage in individual fields has been broadened. Chemical producers and buyers were looking over a chemical price index which includes 85% more commodities—and hence, more accurately mirrors industry conditions.

The BLS has been at work revising and updating its many indices ever since 1946, but the wholesale figure is the first one to be publicly unveiled.

Among its advantages:

- New Base Period. The 100% figure on the new indicator is the average of prices in the three years 1947, 1948 and 1949—the postwar period which is considered average for the postwar years by the U.S. Division of Statistical Standards. Most federal indices will be converted to this base.
- Quicker Calculation. Formerly BLS determined prices by averaging the quotations in each of the four or five weeks in the month. Now prices figured will be those on a single day—in most cases, the Tuesday closest to the 15th of the month. Two advantages will result: Figures should be prepared more quickly, fewer calculations will mean that BLS can save money. These are balanced by the fact that BLS now does not plan to issue weekly chemical price indices.
- Items Included. Where the old chemical index covered 168 items, the new one takes 312 materials into account. The industrial chemicals subgroup, for example, includes 110 prices; drugs, pharmaceuticals and cosmetics went from 23 to 82 items.
- Expanded Classification. Price indices for seven instead of five subgroups will be available. These are industrial chemicals, paint and paint materials, drugs, pharmaceuticals and cosmetics, inedible fats and oils, mixed fertilizers, fertilizer materials and miscellaneous chemicals.

• New Classes. Index figures will be available for inorganic chemicals, organic chemicals, essential oils, prepared paints, paint materials, drug and pharmaceutical materials, cosmetics, nitrogenates, phosphates, potash compounds, soap and detergents, explosives, plastics and photographic materials.

• Chemical Importance. The growing influence of the chemical field is reflected in the fact that chemical prices now will represent 5.3% of the over-all wholesale price index, compared to 2.66% on the old standard.

LABOR

Chemists Too: Some 300 chemical laboratory workers at the Texas Co.'s Port Arthur refinery voted to join their fellow Oilworkers in the scheduled industrywide strike. Main demand is a 25¢-per-hour wage hike.

DPA Recap

Since last August, when CW listed chemical plants which up to then had received Defense Production Administration certificates of necessity, 200 more facilities have been certified.

DPA gives priority treatment to applications for accelerated tax amortization involving defense production facilities for items which are in short supply. Several chemicals appear for the first time on DPA's critical list.

Chemicals (in addition to the perennial headache, sulfur) for which facilities are regarded as critically needed now, and which are detailed on DPA's priority consideration list, are: aniline (tech), benzene, fluorinated hydrocarbon polymers, hydrazine, hydrofluoric acid, hydrogen peroxide, naphthalene, nitrogen, oxygen, parachlorophenol, penicillin, phenol, polyethylene, phthalic anhydride, quinoline, silicones, sodium cyanide, sulfuric acid, thiokol, titanium dioxide, and yellow iron oxide.

Dollarwise, expansion of alumina and aluminum facilities is the most impressive: Alcoa's $115 million plant in Milam County, Tex., is the largest single item on the list. Reynolds Aluminum has two plants under way representing investment of nearly $77 million, and several others have been approved as well.

This limns the sharp need for aluminum. Applications for aluminum production facilities have had high priority for some time; in CW's August compilation, for example, Aluminum Ore's $54 million construction was the second largest certified project on that list.

Summary List of DPA-Certified Chemical Facilities

ACYCLIC ORGANIC CHEMICALS

Company and Location	Product	Amount Applied for[1]	Amount Certified[1]	% Cert.
Jefferson Chemical Co., Port Neches, Tex.	Ethylene glycol	———	———	60
E. I. du Pont de Nemours & Co., Niagara Falls, N. Y.	Polyvinyl alcohol	———	———	50
Aurora Gasoline Co., Detroit, Mich.	Butylenes	400,000	400,000	75
Dow Chemical Co., Freeport, Tex.	Propylene glycol	———	———	50
Cities Service Oil Co., Freeport, Tex.	Isobutane	3,910,000	3,880,000	65
Hooker-Detrex, Inc., Ashtabula, O.	Trichlorethylene	1,640,000	1,491,522	50
Heyden Chemical Corp., Fords, N. J.	Formaldehyde	280,000	280,000	50
E. I. du Pont de Nemours & Co., Parkersburg, W. Va.	Fluoroethylene	503,900	503,900	60
Esso Standard Oil Co., Baton Rouge, La.	Iso-octyl and tridecyl alcohol	3,000,000	2,760,000 240,000	70 50
Humble Oil & Refining Co., Bayton, Tex.	Butylenes	85,191	59,755 25,436	65 50
Shell Chemical Corp., Houston, Tex.	Synthetic glycerine	1,514,500	1,173,600 188,000 152,900	75 45 15
Hugoton Plains Gas & Oil Co., Tyrone, Okla.	Isobutane	119,250	119,250	90
Panoma Corp., Texas County, Okla.	Isobutane	211,400	211,400	90
Union Carbide and Carbon Corp., Kanawha, W. Va.	Ethylene oxide	33,844,008	7,507,597	45
Union Carbide & Carbon Corp., S. Charleston, W. Va.	Anhydrous ethylene chlorhydrin	102,300	102,300	75
Texas Natural Gasoline Corp., H. W. Bass & Sons, Inc., Tulsa, Okla.	Butanes	565,243	159,830 376,413	40 65

[1] No dollar values are listed for those facilities (or part of them) which were completed or acquired before Sept. 23, 1950.

AMMONIA, AMMONIA COMPOUNDS

Company and Location	Product	Amount Applied for	Amount Certified	%
The Atlantic Refining Co., Point Breeze, Philadelphia Refinery	Anhydrous ammonia	3,400,000	3,400,000	50
Lion Oil Co., New Orleans, La.	"	30,516,000	30,452,000	50
Food Machinery & Chemical Co., South Charleston, W. Va.	"	2,503,000	2,503,000	50
Phillips Chemical Co., Texas Gulf Coast	" also methanol, acetylene	38,760,000	38,260,000	50
Pennsylvania Salt Mfg. Co., Wyandotte, Mich.	Anhydrous ammonia	2,400,000	2,400,000	50
Edwal Laboratories, Ringwood, Ill.	Ammonium thiosulfate	16,308	10,356	65
Woodward Iron Co., Woodward, Ala.	Anhydrous ammonia	6,000,000	6,000,000	50

CARBON

Company and Location	Product	Amount Applied for	Amount Certified	%
Great Lakes Carbon Corp., Niagara Falls, N. Y.	Graphite electrodes	900,000	892,000	65
Stackpole Carbon Co., St. Marys, Pa.	Electrodes	449,100	446,100	65
Carolina Aluminum Co., Badin, N. C.	Electrodes	207,333	207,333	65

CHLORINE

Company and Location	Product	Amount Applied for	Amount Certified	%
Southern Alkali Corp., Corpus Christi, Tex.	Chlorine and caustic soda	———	———	50
Southern Alkali Corp., Lake Charles, La.	Chlorine and caustic soda	———	———	50
Dow Chemical Co. Freeport, Tex.	Chlorine	———	———	50
Dow Chemical Co., Pittsburg, Calif.	Chlorine and caustic soda	———	———	50

CYCLIC ORGANIC CHEMICALS

Company and Location	Product	Amount Applied for	Amount Certified	%
Mathieson Chemical Corp., Niagara Falls, N. Y.	Benzene hexachloride	———	———	50
Southern Alkali Corp., Natrium, W. Va.	Benzene hexachloride	———	———	50

Expansion plans for anhydrous ammonia are big, too. Lion Oil (New Orleans) slated a $30½ million plant; Phillips Chemical (Texas Gulf Coast) charted one costing about $39 million; and there are other companies scheduled for $2½-$6 million investments.

American Cyanamid's giant nitrogen plant on the Texas Gulf Coast is still in the planning stages. There has been some delay in getting under way, and financing hasn't been decided upon yet.

Fewer 100% Certifications: New units for producing ethylene oxide and ethylene glycol reached full capacity late last year at UCC's huge Kanawha, W. Va., plant, and a new unit producing methyl ethyl pyridine —niacin raw material—began operation this month. Point of interest in this new plant: Only $7,507,597 of its value is considered vital to the defense effort, and just 45% of this is granted accelerated amortization.

Because of this drop in the portion of proposed investment certified for quick amortization in several industries, the CW chart this time includes both "amount applied for" and "amount certified."

Two silicone producers (*CW, Feb. 16*) have received certificates lately; Dow Corning has an $11 million plant in Midland, and General Electric a $4.5 million plant in Waterford, N. Y., both of which have just been certified.

Applications for sulfur and sulfuric acid facilities, now given seventh priority, have continued. Eleven acid units, involving outlays from $120,000 to $9,000,000 (usually at 70% rapid write-off on the full investment) have been granted certificates. Ten sulfur producers have received them.

Facilities planned for the manufacture of ethylene dibromide, bromine, and other antiknock chemicals can apparently meet the demand for these products. Last August, plants of this sort were receiving quick certification; now only two units for the Ethyl Corp. (Baton Rouge, value $150,000; and Edgemoor, Del., value $184,000) have been certified.

And also conspicuous by their absence are synthetic fiber and cellulose expansions. Chemstrand's $88 million nylon plant was the largest single unit on last August's list; now neither nylon nor rayon factories are on the list.

Surprising to no one is the continuation of certification for benzene, toluene, xylene, and naphthalene expansions. Plants scattered from New Jersey to Texas to Hawaii have been granted the essential go-ahead papers.

CYCLIC ORGANIC CHEMICALS Cont'd

Company and Location	Product	Amount Applied for	Amount Certified	%
Allied Chemical & Dye Co., Barrett Div., Ironton, O.	Naphthalene & quinoline	——	——	70
Commercial Solvents Corp., Terre Haute, Ind.	Benzene hexachloride	——	——	50
Deep Rock Oil Corp., Cushing, Okla.	Benzene,	3,400,000	1,550,000	90
	toluene,		1,525,000	65
	xylene		175,000	40
Standard Oil Co. (Cal.), Richmond, Cal.	Benzene	1,187,000	1,079,400	90
			107,600	45
Taylor Refining Co., Corpus Christi, Tex.	Benzene,	3,755,000	1,053,000	90
	toluene		2,173,000	65
			530,000	40
Great Southern Chemical, Corpus Christi, Tex.	Benzene,	4,000,000	1,200,000	90
	toluene		2,150,000	65
			600,000	45
			50,000	15
Dow Chemical Co., Midland, Mich.	Aniline	135,000	135,000	60
Honolulu Gas Co., Ltd., Honolulu, Hawaii	Benzene	243,427	243,427	90
Monsanto Chemical Co., St. Louis, Mo.	Phthalic anhydride	5,005,000	4,880,650	50
Barrett Division, Allied Chemical & Dye, Chicago, Ill.	Phthalic anhydride	4,110,000	4,110,000	50
Sherwin-Williams Co., Chicago, Ill.	Refined phthalic anhydride	1,287,200	1,287,200	50
Monsanto Chemical Co., Monsanto, Ill.	Phenol	5,575,000	5,403,478	50
Koppers Co., Jefferson City, Ala.	Naphthalene	2,145,000	2,048,000	60
Koppers Co., Kearny, N. J.	Benzene	165,200	165,200	90
Koppers Co., Chicago, Ill.	Naphthalene	196,000	196,000	60
Reichhold Chemicals, Inc., Home Office, Detroit	Phenol	1,479,500	1,375,000	50

METALS AND METAL COMPOUNDS

Company and Location	Product	Amount Applied for	Amount Certified	%
Aluminum Ore Co., Mobile, Ala.	Alumina	12,000,000	12,000,000	80
Aluminum Co. of America, Milam County, Tex.	Primary aluminum	115,000,000	115,000,000	80
Blackwell Zinc Co., Blackwell, Okla.	Zinc concentrates	——	——	60
Aluminum Co. of America, (St. Lawrence Plant) Massena, N. Y.	Aluminum	——	——	70
Union Carbide & Carbon Corp., Niagara Falls, N. Y.	Calcium carbide	——	——	60
Kawicki Chemical Co., Boyerton, Pa.	Titanium double fluorides	——	——	60
Warner Co., Devault, Pa.	Magnesium oxide	——	——	60
The New Jersey Zinc Co. of Pa., Palmerton, Pa.	Zinc	——	——	60
Virginia-Carolina Chemical Corp., Charleston, S. C.	Phosphorus	1,064,580	664,085	50
Reynolds Metals Co., Saline County, Ark.	Alumina	——	——	70
Dow Chemical Co., Freeport, Tex.	Magnesium oxide	——	——	60
Pacific Coast Borax Co., Boron, Cal.	Boron ores	——	——	25
Wah Chang Corp., Glen Cove, N. Y.	Tungsten	53,160	53,160	60
Rem-Cru Titanium, Inc., Midland, Pa.	Titanium	150,000	126,000	65
Ethyl Corp., Edgemoor, Del.	Tetraethyl lead	184,125	184,125	90
Aluminum Co. of America, Alcoa, Tenn.	Aluminum	335,000	335,000	60
Cobalt Nickel Reduction Co., Fredericktown, Mo.	Ore conc.	1,182,000	1,182,000	90
Reynolds Metals Co., Jones Mills, Ark.	Aluminum pig	216,500	216,500	70
Cerium Metals Corp., Niagara Falls, N. Y.	Rare earth metals	160,000	160,000	65
Lavaca Pipe Line Co., near Port Lavaca, Tex.	Aluminum	1,493,996	181,315	70
Telluride Mines, Inc., Telluride, Colo.	Lead ore concentrates	263,917	179,489	60
Mattnaiessen & Hegeler Zinc Co., LaSalle, Ill.	Cadmium	200,039	200,039	60
Kaiser Aluminum & Chemical Corp., Louisiana	Aluminum	6,000,000	6,000,000	70
Union Carbide & Carbon Corp., Niagara Falls, N. Y.	Tungsten metal powder	545,000	529,500	60
Aluminum Ore Co., Mobile, Ala.	Alumina	875,728	222,878	70
Aluminum Ore Co., East St. Louis, Ill.	Alumina	548,930	523,480	70

METALS AND METAL COMPOUNDS Cont'd

Company and Location	Product	Amount Applied for	Amount Certified	%
Reynolds Metals Co., Corpus Christi, Tex.	Aluminum	42,750,000	42,319,000	85
Reynolds Metals Co., State of Arkansas	Aluminum pig	34,000,000	33,492,000	85
Reynolds Metals Co., Corpus Christi, Tex.	Aluminum pig	3,250,000	3,250,000	85
Reynolds Metals Co., Saline County, Ark.	Alumina	3,000,000	1,831,300	80
American Smelting & Refining Co., Denver, Colo.	Cadmium	74,990	73,475	25
Dow Chemical Co., Midland, Mich.	Magnesium alloy ingot	230,000	230,000	65
Columbian Carbon Co., Trenton, N. J.	Iron oxide pigments	1,122,850	1,076,850	60
Wah Chang Corp., Glen Cove, N. Y.	Sodium tungstate	60,807	60,807	60
Union Carbide & Carbon Corp., Niagara Falls, N. Y.	Calcium carbide	450,000	450,000	50
Silverstein and Pinsof, Inc., Chicago, Ill.	Zinc oxide	791,500	716,500	50
Colorado Standard Lead Zinc Mines, Inc., Santa Barbara, Cal.	Zinc concentrates	210,124	161,224	60
Rare Earths, Inc., Passaic County, N. J.	Rare earth chlorides	50,000	45,100	65
Ethyl Corp., Baton Rouge, La.	Tetraethyl Lead	150,000	150,000	65

OXYGEN, HYDROGEN AND OTHER GASES

Company and Location	Product	Amount Applied for	Amount Certified	%
Air Products, Inc., Iselin, N. J.	Oxygen	———	———	50
Air Products, Inc., Parkersburg, W. Va.	Oxygen	———	———	50
M. Kimerling & Sons, Inc., d/b/a Alabama Oxygen Co., Birmingham	Oxygen, acetylene	———	———	50
Air Products, Inc., Flint, Mich.	Oxygen	———	———	70
Air Products, Inc., Granite City, Ill.	Oxygen	———	———	50, 70
Liquid Carbonic Corp., Chicago, Ill.	Oxygen	———	———	50
Industrial Air Products Co., Medford, Ore.	Oxygen	———	———	70
Stuart Oxygen Co., Pacific Coast use	Oxygen, acetylene	———	———	50
Air Reduction Co., Inc., Within U. S.	Oxygen	———	———	70, 50
Union Carbide & Carbon Corp.	Oxygen, nitrogen	8,831,900	6,637,400 2,194,500	60 45
Hofman Laboratories, Inc., Newark, N. J.	Liq. hydrogen	38,507	26,967	45
Southern Oxygen Co., Inc., Greensboro, N. C.	Oxygen	41,660	10,560 31,100	45 60
Southern Oxygen Co., Inc., Bladensburg, Md.	Oxygen, hydrogen	779,301	618,900 137,439	45 60
Southern Oxygen Co., Inc., Kingsport, Tenn.	Oxygen, hydrogen	100,700	71,600 29,100	45 60

OXYGEN, HYDROGEN, OTHER GASES

Company and Location	Product	Amount Applied for	Amount Certified	%
Air Reduction Co., Inc., Acton, Mass.	Hydrogen, oxygen	471,874	291,564	55
Air Reduction Co., Inc., Central Falls, R. I.	Oxygen	153,244	64,505	55
Union Carbide & Carbon Corp.	Liq. oxygen	2,586,960	111,700 2,475,260	45 60
Liquid Carbonic Corp., LaGrange Park, Ill.	Acetylene	450,000	450,000	55
Western Oxygen, Inc., Seattle, Wash.	Oxygen	52,141	10,348 41,792	45 60
National Cylinder Gas Co., Conshohocken, Pa.	Compressed oxygen	203,500	197,000	60
American Cyanamid Co., Along Gulf Coast	Nitrogen	53,735,000	47,745,000	50
Air Reduction Co., Inc., Fairfield, Ala.	Oxygen, nitrogen	257,493	12,100 245,393	45 60
Air Reduction Co., Inc., Chicago, Ill.	Oxygen	181,570	23,000 150,700	45 60

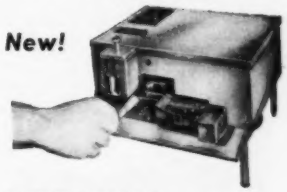
PHARMACEUTICALS

Company and Location	Product	Amount Applied for	Amount Certified	%
Wallace & Tiernan Products, Inc., Belleville, N. J.	Pharmaceuticals	———	———	85
Winthrop-Stearns, Inc., Rensselaer, N. Y.	Pharmaceuticals	———	———	70
Commercial Solvents Corp., Terre Haute, Ind.	Antibiotics	———	———	65

(Continued)

POTDEVIN

... the greatest name in COST-CUTTING PACKAGING MACHINES since 1893



POTDEVIN-CORLISS COLLAPSIBLE TUBE LABELERS

Applies 32 slip labels per minute to collapsible tubes. Automatically forms label and ejects it on the tube. Machines for ⅛, ¼, ½ and 1 ounce tubes.

Are you having trouble with your short-run labeling jobs? Get a POTDEVIN LABEL PASTER today. Models for 6, 8½, 12 and 18 inch labels, hand and motor driven. Semi-automatic feeds, too. Try a POTDEVIN on a FREE 10 day TRIAL.

Write for literature

Visit our Booth No. 460 at the National Packaging Exposition.

POTDEVIN MACHINE CO.

282 North St., Teterboro, N. J.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

POTDEVIN

3 REAL MONEY SAVERS

• POLYETHYLENE LINERS & BAGS

MADE OF VisQueen® FILM

A PRODUCT OF THE VISKING CORPORATION

Lightweight, tough, non-shatterable, non-corrodable, non-toxic, non-rusting, odorless and tasteless. Resistant to alcohol, oils, chemicals and solvents at room temperature. Manufactured by Bar-Heat-Seal Process - Waterproof. Save money . . . prevent spoilage. Solve your packaging and preserving problems. Made to your specifications. Write for our new, low prices.

Also Manufacturer polyethylene circular discs for bottles, jar caps and drum heads.

TRANSPARENT BARREL or DRUM COVERS

Made from tough vinyl with elastic. Fits drums or barrels from 5 gal. to 75 gal. capacity. Prevents materials from being exposed to the elements after container has been opened. Saves time and money. Gives more service than wooden barrelheads or drum lids.

500 or more . . . 35c ea.
100 to 500 . . . 40c ea.
Less than 100 . . . 45c ea.

PRACTICAL UTILITY APRONS

Made of heavy gauge tough vinyl. Easy to clean with damp cloth. Won't crack or peel. Full cut to protect clothes. Colors: Black, brown, white or clear.

50 or more . . . 75c ea.
Less than 50 . . . $1.00 ea.

Vinyl & Polyethylene Sheeting Sold by the yard.

PELAMAY *Products*

OUR NEW ADDRESS
112 4th Ave., N. Y. 3, N. Y. GR 7-8468-9

describe the function... D&O will supply the aromatic chemicals

Is it for Flavor and Aroma, for Perfume, for Dental or Medicinal use... Do you require an Industrial Deodorant, a Soap Scent?

Then D&O might suggest **ANETHOLE, CITRAL, EUGENOL, HYDROXYCITRONELLAL, ISO BORNYL ACETATE, TERPINYL ACETATE or many others.**

Give us an idea of your requirement... we will be pleased to recommend and supply the Aromatic Chemical that is needed.

Write for new catalog.

D.O

DODGE & OLCOTT, INC.

180 Varick Street • New York 14, N. Y.

Sales Offices in Principal Cities

ESSENTIAL OILS • AROMATIC CHEMICALS

PERFUME BASES • VANILLA • FLAVOR BASES

PHARMACEUTICALS Cont'd

Company and Location	Product	Amount Applied for	Amount Certified	%
Wyeth, Inc., West Chester, Pa.	Penicillin G	4,844,954	3,266,232	60
			1,566,707	30
The Upjohn Co., Kalamazoo, Mich.	Penicillin	3,345,813	3,345,813	50
Sterling Drug, Inc., Cincinnati, O.	Antimalarial drug components	104,247	104,247	60

RESINS

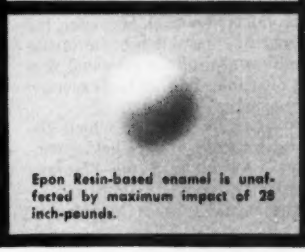
Company and Location	Product	Amount Applied for	Amount Certified	%
Monsanto Chemical Co., Springfield, Mass.	Resins	———	———	50
Monsanto Chemical Co., Springfield, Mass.	Polyvinyl chloride resins	———	———	60
Union Carbide & Carbon Corp., Bound Brook, N. J.	Phenol-formaldehyde resins	———	———	65, 50
Union Carbide & Carbon Corp., South Charleston, W. Va.	Vinyl chloride resins	———	———	60
Union Carbide & Carbon Corp., Kanawha Co., W. Va.	Fluorothene resins	1,609,000	1,609,000	60
B. F. Goodrich Chemical Co., Avon Lake, O.	Polyvinyl chloride resins	5,377,960	5,377,960	50
Dow Chemical Co., Midland, Mich.	Saran resin	———	———	60
Monsanto Chemical Co., Long Beach, Calif.	Styrene polymer	526,924	468,113	60
Polymer Corp., Reading, Pa.	Teflon	———	———	70
Union Carbide & Carbon Corp., South Charleston, W. Va.	Polyethylene plastic	———	———	70
E. I. Du Pont de Nemours & Co., Parkersburg, W. Va.	Teflon	———	———	70
Dow Chemical Co., Midland, Mich.	Styrofoam	———	———	60
Reynolds Metals Co., McCook, Ill.	Polyvinyl chloride film	———	———	60
Dow Chemical Co., Freeport, Tex.	Butadiene-styrene latex	———	———	50
Rohm & Haas Co., Philadelphia	Storage methyl methacrylate	———	———	60
Dow Chemical Co., Midland, Mich.	Styrene polymers	2,607,000	2,607,000	50
Dow Chemical Co., Midland, Mich.	Polystyrene	268,000	268,000	50
Dow Chemical Co., Midland, Mich.	Styrene-butadiene	———	———	50
E. I. DuPont de Nemours & Co., Orange, Tex.	Polyethylene	10,293,000	10,293,000	60
Union Carbide & Carbon Corp., Texas City, Tex.	Polyethylene	17,694,200	16,604,200	60
M. W. Kellogg Co., Jersey City, N. J.	Thermoplastic material	131,452	131,452	60
The Special Chemical Co., Cleveland, O.	Polyvinyl acetate	100,000	100,000	45
Thiokol Corp., Moss Point, Miss.	Thiokol	465,000	453,000	75

SULFUR, SULFURIC ACID, SULFUR COMPOUNDS

Company and Location	Product	Amount Applied for	Amount Certified	%
Standard Oil Co. (Ind.), Whiting, Ind.	Elemental sulfur	1,720,000	1,720,000	80
Sid Richardson Carbon Co., Odessa, Tex.	Elemental sulfur	130,830	130,830	80
Phillips Chemical Co., Ector County, Tex.	Elemental sulfur	1,741,000	1,741,000	80
Shell Chemical Co., Houston, Tex.	Elemental sulfur	500,000	500,000	80
Gulf Oil Corp., Port Arthur, Tex.	Sulfur	586,390	586,390	80
Hancock Chemical Co., Long Beach, Calif.	Sulfur	250,000	250,000	80
Phillips Chemical Co., Crane, Tex.	Sulfur	525,000	510,200	70
Tide Water Associated Oil Co., Avon-Contra Costa County, Calif.	Hydrogen sulfide	400,000	400,000	70
Atlantic Refining Co., Philadelphia	Sulfuric acid	3,214,000	3,214,000	70
Michigan Chemical Corp., St. Louis, Mich.	Sulfuric acid	82,776	81,681	70
Detroit Chemical Works, Detroit, Mich.	Sulfuric acid	950,000	950,000	70
Consolidated Chemical Ind., Inc., Houston, Tex.	Sulfur	400,000	389,000	70
			11,000	15
Stauffer Chemical Co., Lowland, Tenn.	Carbon bisulfide	995,964	995,964	45
Monsanto Chemical Co., Monsanto, Ill.	Sulfuric acid	8,800,000	8,800,000	70
Allied Chemical & Dye Corp., Port Chicago, Calif.	Sulfuric acid	1,067,000	1,067,000	70

Why severe impact won't crack an EPON® RESIN finish

Competitive enamel chips under a 16 inch-pound impact.



Epon Resin-based enamel is unaffected by maximum impact of 28 inch-pounds.

THE SETUP: An impact tester which permits a falling 2-lb. weight to dent an enameled test panel. A variety of metal panels, including aluminum, was used—but the result was always the same.

The Result: Competitive enamels flaked and chipped off. *Epon Resin-based* enamels adhered to the metal without the slightest trace of failure. In fact, the Epon Resin finish successfully withstood a maximum impact of 28 inch-pounds, while conventional finishes failed at 16 inch-pounds or less.

The Reason: The Epon Resin molecule is an entirely new class of polymer with evenly spaced reactive groups which permit it to cure to a flexible film. Also, its polar nature contributes outstanding adhesion. As a plus value, Epon Resins have excellent resistance to detergents, caustic and many acids.

Write to your nearest Shell Chemical office for more information and samples.

SHELL CHEMICAL CORPORATION

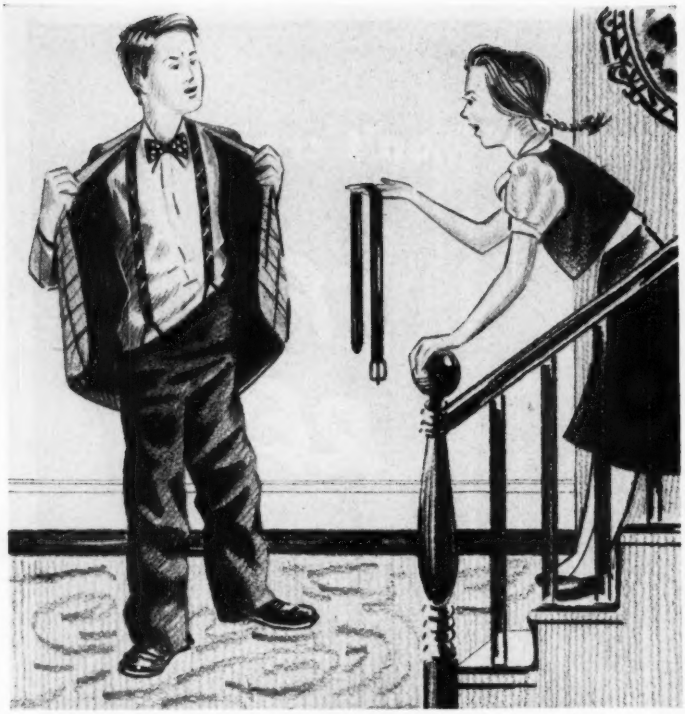
CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

EASTERN DIVISION:
500 Fifth Avenue, New York 36

WESTERN DIVISION:
100 Bush Street, San Francisco 6

Los Angeles • Houston • St. Louis • Chicago
Cleveland • Boston • Detroit • Newark • Atlanta

IN CANADA
Shell Oil Company of Canada, Limited
Toronto • Montreal • Vancouver



LOOKING FOR A BETTER SUSPENDING AGENT?

VEEGUM provides complete suspension at lower viscosities than organic gums, or suspends more efficiently at equal viscosity. Thixotropic characteristics of VEEGUM give added suspending ability coupled with good flowability.

EMULSION STABILIZER: VEEGUM is highly effective in very small amounts as an emulsion stabilizer. This is true even if significant amounts of electrolytes are added. VEEGUM will permanently stabilize many types of emulsions containing various oils, fats, and waxes.

EASILY PREPARED: Effective dispersions of Veegum may be prepared by simple agitation with or without heat.

CHARACTERISTICS: VEEGUM is non-toxic, non-irritating, and inorganic. It is highly purified Colloidal Magnesium Aluminum Silicate. As a thickener, VEEGUM is white, opaque, non-tacky and non-gelatinous when dispersed in water.

Our expanded plant facilities are now supplying VEEGUM to meet the steadily increasing demands of the chemical industry. May we serve you and your product? Please write today for the complete VEEGUM Story.

R. T. VANDERBILT CO.

specialties V *department*

230 PARK AVENUE, NEW YORK 17, N. Y.

☐ Please send Veegum Bulletins C110 and C41 ☐ Please send sample of Veegum

name .....

position .....

(Please attach to, or write on, your company letterhead)

Patent Pool

The Government's anti-trust suit against New Wrinkle, Inc. and the Kay & Ess Co., after being thrown out in Ohio District Court, has been reinstated by the Supreme Court; the lower court decision has been reversed.

The Supreme Court holds, "An arrangement was made between patents holders to pool their patents and fix prices on the products for themselves and their licensees. The purpose and results plainly violate the Sherman Act."

The Government's charge alleged that the two companies made agreements to fix uniform minimum prices and eliminate competition in the wrinkle enamel trade. This the Supreme Court has found they did.

Patents for Stock: New Wrinkle was assigned patents covering the manufacture of wrinkle finish enamels, varnishes and paints owned by the Chadeloid Chemical Co. and Kay & Ess. In return the patent owners got stock in New Wrinkle.

Then, the Government pointed out, New Wrinkle granted licenses for the use of these patents to wrinkle enamel manufacturers on condition they accept a minimum price schedule on all such products they sold. However, the price schedule did not become operative until twelve of the principal producers of wrinkle finishes had executed the agreements.

This price fixing plan, which the Government seeks to have held a conspiracy in violation of the Sherman Act, became effective in 1938, and by 1948, according to the Government, more than 200 companies, substantially all the manufacturers of wrinkle finishes in the country, had entered into such agreements with New Wrinkle.

Conformity by New Wrinkle: Among other provisions, the Government stated, these agreements required that any licensee, in all its sales of products covered by the patents, conform to a schedule of minimum prices, discounts and selling terms established by New Wrinkle.

New Wrinkle could alter any or all of the terms of the price schedules on four days notice in writing, but only if the new terms were the same for all licensees and New Wrinkle itself. In addition New Wrinkle could revoke the license, within thirty days after written notice, of any licensee who failed to conform to the agreement and price schedules.

"License rulings" setting forth details of pricing and marketing were issued by New Wrinkle at various intervals.

ORONITE CHEMICAL COMPANY

THE NAME TO WATCH IN CHEMICALS

Where industry had the "need" Oronite Chemicals supplied the way

A partial list of ORONITE PRODUCTS

Detergent Alkane
Detergent Slurry
Detergent D-40
Detergent D-60
Wetting Agents
Lubricating Oil Additives
Cresylic Acids
Gas Odorants
Sodium Sulfonates
Purified Sulfonate
Naphthenic Acids
Phthalic Anhydride
Ortho-Xylene
Para-Xylene
Xylol
Aliphatic Acid
Hydroformer Catalyst

WHEN synthetic detergents began to revolutionize the nation's washing habits, the soap industry needed huge quantities of the basic chemicals from which detergents are made. Oronite became, and still is, a major supplier of these chemicals.

Our specialty is mass-producing needed chemicals for industry. Oronite products meet the highest standards of purity, uniformity and dependability.

Perhaps we already have the chemical to improve your product or process. Possibly we can put a chemical you need in mass production. A letter or telephone call will place our experience and facilities at your disposal.

Most ORONITE PRODUCTS
are available now—
some are in short supply
Please inquire!

ORONITE CHEMICAL COMPANY

38 SANSOME ST., SAN FRANCISCO 4, CALIF. — STANDARD OIL BLDG., LOS ANGELES 15, CALIF.
30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y. — 600 S. MICHIGAN AVENUE, CHICAGO 5, ILL.
MERCANTILE SECURITIES BLDG., DALLAS 1, TEXAS

2342

PROCAINE HYDROCHLORIDE USP

•

PARA AMINO BENZOIC ACID
and Sodium Salt

Manufactured by
GAMMA CHEMICAL CORP.
Great Meadows, N. J.

Sole Sales Agents
Fisher **CHEMICAL COMPANY, Inc.**
60 E. 42nd STREET, NEW YORK 17, N. Y. • MUrray Hill 2-2587-8-9
Cable Address: PHARCHEM

HUMIDITY
Within 1° Wet Bulb

If controlled air conditions are necessary for some important testing and research, here is a cabinet that provides 6 cubic feet of controlled air in constant circulation. Within the range of 40° F. to 140° F., this cabinet will maintain both dry and wet bulb temperatures within 1° F.

Heating and cooling, humidifying and drying, are all controlled automatically and uniform conditions are maintained as long as the unit is in operation. Outside indicators reveal the conditions inside the box at all times.

AIRE-REGULATOR

Constant Temperature and Humidity Cabinets are now in use by prominent laboratories in many lines for testing and research. Among the users are food manufacturers of all kinds producing bakery products, flour, packaged mixes, cheese, yeast, beer, candy and meat products; others are manufacturers of pharmaceuticals, photographic supplies, paints and varnishes, chemicals, insulating materials, instruments, box board, paper tape and crude oil products. Wherever there is a need for checking the action of temperatures and humidity there is a need for an Aire-Regulator. Write for bulletins and tell us your requirements.

Food Technology, Inc. 5909 Northwest Highway Chicago 31, Illinois

FOREIGN. . . . . .

Sulfur: Mexico's government oil industry is setting its sights for new sulfur recovery plants this year, hopes to up the country' sulfur output from 1,800 to 40,000 tons. Almost all of Mexico's sulfur is exported—she has no sulfuric acid industry of her own.

•

Synthetic Resins: Reichhold Chemicals, Inc. has just lined up its nineteenth foreign affiliate, with the acquisition in Israel of facilities for a manufacturing plant, capable of producing the entire line of synthetic resins for the paint, paper, printing ink and plywood industries. Reichhold's engineers from this country will be sent to Israel to lend necessary know-how, but financial and operational control will be retained in Israel.

•

Australia: Parke Davis & Co. is planning a $5 million expansion of its manufacturing and research facilities in Australia. Various new products, many of which have been imported up to now, are expected to be on the local production schedule.

KEY CHANGES . .

Lawton A. Burrows: From technical division manager, explosives dept., to general technical director, textile fibers dept., E. I. du Pont de Nemours & Co., Inc.

B. Bynum Turner: To director, Ethyl Corp.

C. W. Loomis: To director, Bemis Bro. Bag. Co.

F. V. Deaderick: To vice president, Bemis Bro. Bag Co.

Frederick B. Grosselfinger: To technical director, Synthetic Nitrogen Products Corp.

Erwin G. Somogyi: From associate research director, Plastics Div., to director of research, Merrimac Div., Monsanto Chemical Co.

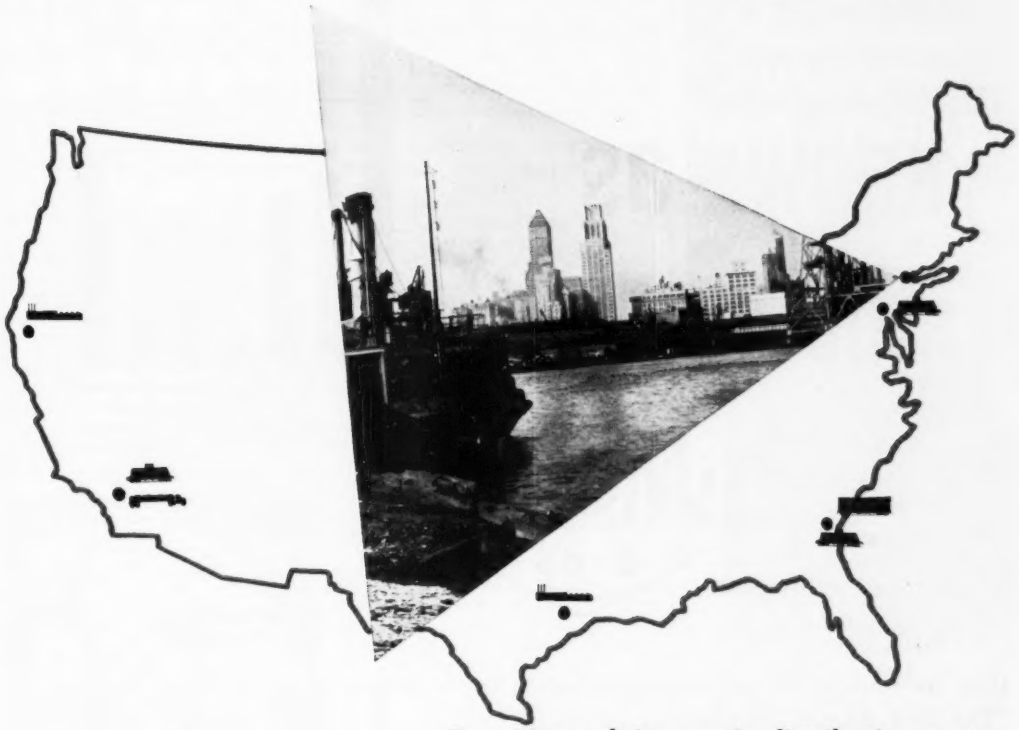
George W. Steahly: To assistant director of research, Nitro, W. Va., laboratories, Monsanto Chemical Co.

John O. Pritchard: To head of process evaluation div., American Potash & Chemical Corp.

David P. Delaven: From chemical superintendent, Padadena, Tex. plant, Mathieson Chemical Co., to assistant manager, insecticides plant, Kolker Chemical Div., Diamond Alkali Co.

Robert N. DuPuis: From research and development manager, S. C. Johnson & Co., to director of research and development, Philip Morris & Co.

How close are you to Port Newark, N.J.?



Port Newark is a main distribution center for Dow Caustic Soda!

Take advantage of Dow's nation-wide distribution facilities . . . and receive dependable caustic soda delivery! Caustic Soda Solid, Flake and Ground Flake are shipped from terminals in Port Newark, New Jersey; Chicago, Illinois and Charleston, South Carolina. Dow distributes Caustic Soda Solution from bulk tank terminals in Los Angeles, California; Charleston, South Carolina and Carteret, New Jersey. Three large plants—in Michigan, Texas and California—ship Dow Caustic Soda into these terminals. For dependable caustic soda delivery . . . look to Dow for superior service and convenient distribution facilities!

wherever you are . . . *you're close to*

DOW CAUSTIC SODA

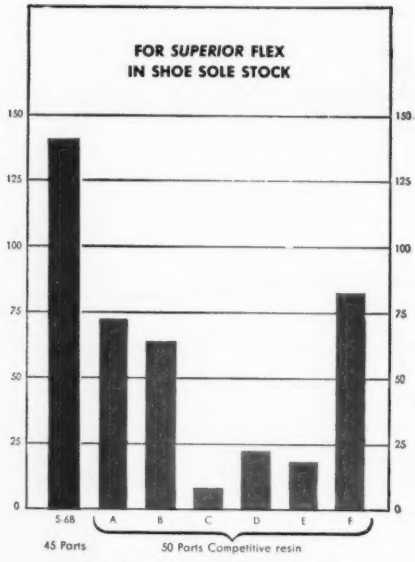
THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Atlanta • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto 1, Canada

DOW
CHEMICALS
INDISPENSABLE TO INDUSTRY AND AGRICULTURE

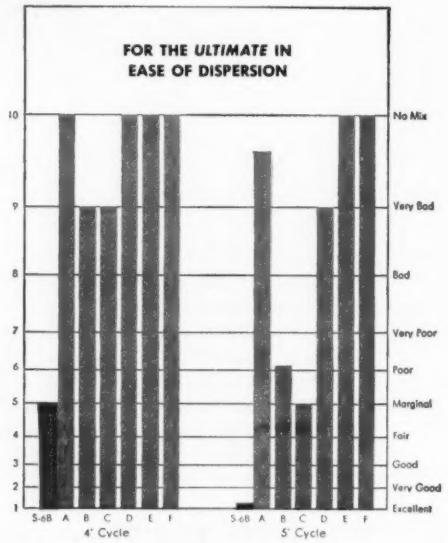
known as the best

PLIOLITE S-6B



Ross Flex of PLIOLITE S-6B vs. competitive resins in shoe sole stock; thousands of flexes/0.1" cut growth

USE PROVED Products



Dispersion rating of PLIOLITE S-6B vs. competitive resins in a gum formulation 50/100 resin/rubber

Here are two reasons why PLIOLITE S-6B is "The Best Known — Known as the Best" reinforcing resin on the market. Shoe soles reinforced with PLIOLITE S-6B are known to have superior flex. And whatever the product PLIOLITE S-6B is easier to disperse — even under marginal mixing conditions.

Check these two graphs—prove to yourself—then talk over your reinforcing problem with your Goodyear Chemical Division representative, or write today to:

Goodyear, Chemical Division, Akron 16, Ohio

GOODYEAR

We think you'll like "THE GREATEST STORY EVER TOLD"— Every Sunday — ABC Network

Pliolite—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

RESEARCH . . . .

New Entries Pace TB Derby

New synthetic niacin-related antitubercular drugs are the focus of nation-wide interest.

They have shown up well in preliminary tests, but medical authorities won't go along with reports of miracle cures.

The truth: It's too early for predictions; several more years of evaluation are needed for a true clinical picture.

Nydrazid, Rimifon, Marsalid. They're the new niacin-related antitubercular drugs that recently have inspired some high-flying prose in the nation's press. But despite the rosy reports, the new drugs now are a far cry from the all-powerful anti-TB weapons they're cracked up to be.

But that doesn't mean they don't have considerable merit. It's just too early for blanket claims. The most that can be said at this time is that they're highly promising—potentially the most promising advance in tuberculosis therapy since streptomycin-PAS (para-aminosalicylic acid).

RAKE AND SEVRINGHAUS (seated): No breather in sight.

To drug firms Hoffmann-La Roche, Inc. and E. R. Squibb & Sons, goes the credit for the new discoveries. Hoffmann-La Roche's product is Rimifon, the hydrazide of isonicotinic acid; Nydrazid, chemically indentical, belongs to Squibb. Marsalid, an isopropyl derivative of isonicotinyl hydrazide, also is in the Hoffmann-La Roche fold.

Research leading to the new drugs harks back to the European anti-TB agent Tibione. A thiosemicarbazone, Tibione proved too toxic for general clinical use. But it did have marked therapeutic activity. Taking their cue from the Germans, Squibb and Hoffmann-La Roche researchers screened hundreds of thiosemicarbazones and related compounds in the hope that an equally effective, but less toxic member could be found.

Isonicotinyl hydrazide fulfilled that hope. Both companies' researchers arrived at the compound independently, found it relatively non-toxic. Squibb capped its efforts with the hydrazide; Hoffmann-La Roche chemists, headed up by 39-year-old H. Herbert Fox went on to the isopropyl derivative (Marsalid) and a glucosyl derivative.

Isonicotinic acid hydrazides aren't chemical trail blazers; they were described in Austria back in 1912. But, in regard to their medicinal prowess at least, the Austrians missed the boat. Not until the research by the American pharmaceutical houses, was the compounds' anti-TB activity realized.

Squibb and Hoffmann-La Roche have received the lion's share of publicity for their part in the development of the new drugs. But they have no corner on commercial production of niacin-like anti-TB compounds. Lederle Laboratories (Div. of American Cyanamid Co.) recently (*CW, Feb. 16*) brought out Aldinamide, a pyrazinamide resembling niacin in chemical makeup. And only the other day, Nepera Chemical Co. (Yonkers, N.Y.) broke the news of its own isonicotyl hydrazide, trade-named Pyricidin.

Just how the new synthetics fight tuberculosis is still not clear. Competitive inhibition has been put forth as one explanation. The idea is something like this: Niacin is believed to be an essential part of the TB bug's diet. Because of their structural similarity to niacin, the isomeric hydrazides are easily ingested by the bacillus. But the isomers cannot perform the metabolic functions of niacin, with catastrophic results to the bacteria.

If the doctors are in the dark about biological mechanisms, they are considerably more enlightened on clinical evidence. After initial successes with laboratory animals the drugs were

SLY

PIONEERS AND LEADERS IN

DUST CONTROL

WE CAN SAVE YOU MONEY BY COLLECTING YOUR DUST

Are you one of those who is still just *enduring* dust? If you are in dust, why not let a trained and experienced Sly engineer suggest a solution?

In *your particular industry* we have numerous operating installations. All of them are *saving* money for their owners—in cleaner plants, cleaner products, better personnel relations. Some of them are even *making* money by recovering valuable products.

With thousands of installations throughout the past 50 years, we have a wealth of experience in all industries. It is an exceptional background of value to anyone with a dust problem.

Yet — Sly costs *no more* (sometimes *less.*) May we send Bulletin 98 and discuss your dust problem with you?

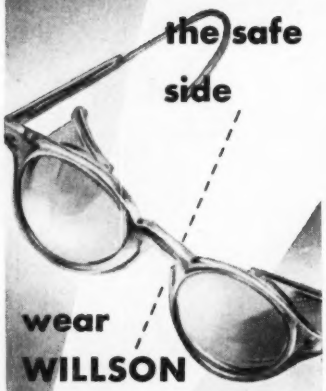
THE W. W. SLY MANUFACTURING CO.

4770 Train Avenue • Cleveland 2, Ohio

New York • Chicago • Philadelphia • Syracuse
Detroit • Buffalo • St. Louis • Indianapolis
Birmingham • Los Angeles • Toronto

WILLSON
dependable
eye protection

keep on the safe side



wear WILLSON SPECTACLES

Combined protection, comfort and appearance make Willson safety spectacles outstanding in value. Choose from a full range of metal and plastic frames—fitted with Super-Tough® heat-treated glass lenses, or Plas-Tough® plastic lenses—every one tested for impact resistance and optical quality. Send for catalog describing our complete line of safety equipment.

STYLE AH

METAL FRAME Latest style spectacle with single bridge. Have Hi-Line temples with a "dressy" look. Also available with sideshields. (Non-flammable plastic frame Style WKS shown at top.)

CHOOSE YOUR FAVORITE LENSES FOR ANY WILLSON SPECTACLES

Plas-Tough® Willsonite® Super-Tough®

Three popular types of lenses are available for all Willson Spectacles. Clear glass Super-Tough®, Willsonite® Green Super-Tough® and the new Plas-Tough® lenses that combine the impact resistance of heat-treated glass with the comfort of lightweight plastic.

®Trademark

See your Willson distributor or write for Catalog
WILLSON PRODUCTS, Inc.
135 Thorn St., Reading, Pennsylvania

tried on human tuberculosis sufferers at New York City's Sea View Hospital, Cornell Medical Center and elsewhere.

In clinical trials with 92 patients who were no longer helped by streptomycin-PAS, physicians reported fever reductions; gains in appetite, strength and weight; and an increase in the victim's general sense of well-being. Coughing and spitting were sharply curbed; many of the bed-ridden became ambulatory.

Results of the Sea View studies were capped by this statement from the supervisory doctors: "The mortally ill patients we have studied have obtained therapeutic benefit beyond anything we have ever seen with any of the chemotherapeutic or antibiotic agents previously utilized by us."

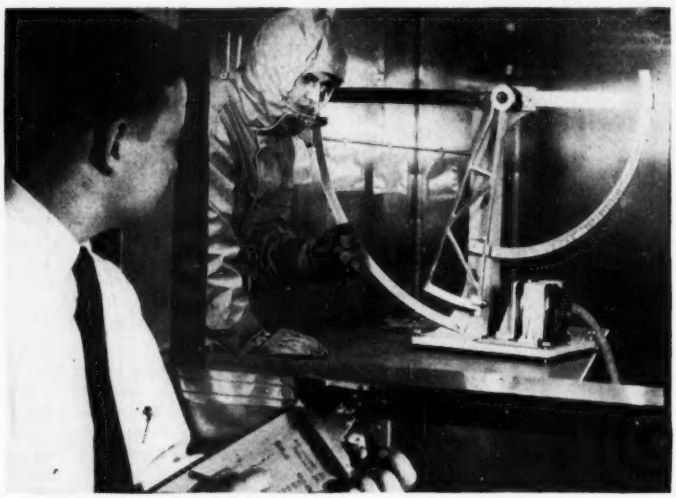
Certain general conclusions on the nature and efficiency of the isonicotinyl hydrazides were drawn from the total available clinical evidence. The compounds seem to be specific for acid-fast bacilli, to which group the TB germ belongs. Moreover, there is reason to believe that the drugs actually kill the offending bacteria since cultures of the bug did not grow from the infected material taken from the lungs of successfully-treated animals. And, at this stage of investigation, it appears that bacteria do not develop resistance to the hydrazides.

But all isn't as sweet as it seems. Despite the apparent recoveries, open lung cavities are still observed in patients treated with the drugs. But the big questions bothering tuberculosis authorities are: Will the "cures" last? Will patients eventually relapse after the drug has been withdrawn?

Too Much, Too Soon: Unfortunately, no one knows the answer. Only time and a lot more research will tell. And that's precisely the bone of contention between the medical profession and the press. The medicos feel the story broke far too soon and with too much fanfare. One West Coast doctor who headed up experiments with the drug at a TB sanitorium says the newspapers exaggerated the clinical benefits.

As a matter of fact, the entire story was supposed to have been held in confidence at least until April, when the technical papers were scheduled to appear in *American Review of Tuberculosis*. But the story leaked, to the chagrin of prominent medical researchers who claim that not nearly enough time has been devoted to clinical evaluation. Their consensus: At least two and probably five more years of investigation are still needed.

From the look of things, there won't be a dearth of investigators. Veterans Administration ran a short-term experiment with the new drugs, labelled it inconclusive. VA tells CHEMICAL WEEK it now is launching controlled



It's Cold Inside

ARCTIC TEMPERATURES of 30 below zero are reproduced in the cold room of Olin Industries, Inc.'s new advanced research and development laboratories, New Haven, Conn. Improved packaging films is the objective of the company's neophyte research arm. In low temperature test, a heavily clothed technician operates pendulum impact machine while an unburdened associate records data observed through thick window.

COLUMBIA-SOUTHERN

can solve your delivery problems on

MURIATIC ACID

(Hydrochloric Acid)

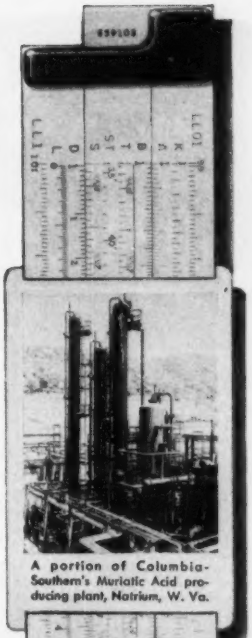
20°—22° Baume

Shipped in 8,000 gallon rubber-lined tank cars.

As a result of recent production expansions, Columbia-Southern can better serve the needs of Muriatic Acid consumers.

Columbia-Southern, a leading manufacturer of basic industrial chemicals for over half a century, provides prompt delivery of Muriatic Acid in commercial grades from two convenient plant locations: Barberton, Ohio and Natrium, West Virginia.

For an assured source of supply and service, we suggest you contact your Columbia-Southern representative today.



A portion of Columbia-Southern's Muriatic Acid producing plant, Natrium, W. Va.

THESE COLUMBIA-SOUTHERN "PLUS" SERVICES ASSURE PROPER DELIVERY, UNLOADING, HANDLING

Columbia-Southern's staff of technical specialists are on call to help you with your problems. You are welcome to use their services.

TECHNICAL SERVICE AND CONSULTATION

Provide information on applications; new uses; methods of handling; storage and safety precautions.

TRAFFIC SERVICE

Maintain speedy, efficient, economical delivery service; maximum protection of Muriatic Acid in transit; unloading procedures and savings in shipping.

SKILLED LABORATORY TECHNICIANS

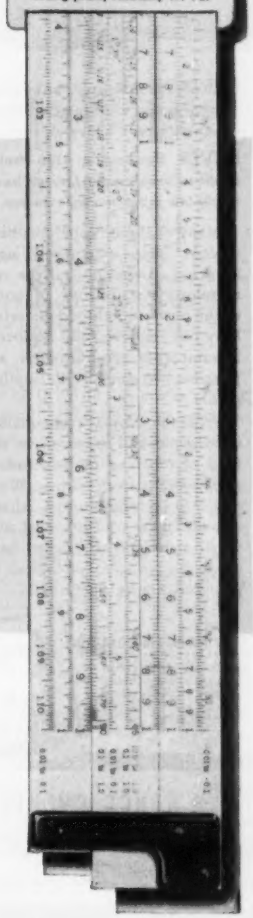
Make sample analyses and control tests to assure exact conformity to meet your special specifications.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

FIFTH AVE. AT BELLEFIELD · PITTSBURGH 13, PA.

DISTRICT OFFICES: BOSTON, CHARLOTTE, CHICAGO, CINCINNATI, CLEVELAND, DALLAS, HOUSTON, MINNEAPOLIS, NEW ORLEANS, NEW YORK, PHILADELPHIA, PITTSBURGH, ST. LOUIS



NOPCO'S
new, wide
range of
NOPALCOL*
Ethylene Oxide Condensates
are outstanding

★ Wetting Agents
★ Detergents
★ Emulsifiers
★ Leveling Agents
★ Spin Bath Additives
★ Rubber Latex Stabilizers

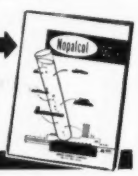
NEVER has Nopco* been able to offer such a variety of synthetic organic surface active agents.

NEVER has such a wide choice of these important materials been available from a *single source.*

Many of these Nopalcols have already been extensively used to great advantage, but the tremendous possibilities of some of the newly-developed materials have not yet been fully explored. Innumerable modifications are possible—to suit specific requirements.

Profit by Nopco's unequalled experience and research in the field of ethylene oxide condensates—and consult with us. We'll gladly put our fund of specialized knowledge at your disposal, and work closely with you to help adapt the Nopalcol chemicals to your processing operations.

This FREE book is full of valuable information, and includes a "Selection Chart" to help you choose the most suitable Nopalcol for your job. Send for a copy today.



*Reg. U. S. Pat. Off.

NOPCO CHEMICAL COMPANY Dept. EOC
Harrison, N. J.
Boston • Chicago • Cedartown, Ga. • Richmond, Cal.

studies in 13 hospitals; top man already is in the field, setting the wheels in motion.

Neither the three military services nor the U.S. Public Health Service have done any work with the new drugs. But USPHS funds are financing a Stanford School of Medicine project on the West Coast. University of California School of Medicine also has experiments under way. And work is expected to continue at Sea View Hospital, Cornell Medical Center and Trudeau Sanitorium (Lake Saranac, N.Y.).

Flood in the Wake: In the wake of the revelation of the promising antitubercular compounds has come a flood of speculation on their long-range significance. Despite some fanciful opinions to the contrary, it's a good bet that the new drugs won't revolutionize TB control measures, won't nullify planned additions to the nation's 110,000 TB hospital beds. If anything, the opinion is prevalent, the new drugs should step up TB control. As one Public Health Service official put it: "No doctor will order a TB patient to stay at home when he can get him into a hospital."

What the new drugs mean to the chemical industry is one for the future. But one thing is sure. Producers aren't going to get rich; the market is definitely limited. And the chances are that the newcomers aren't going to edge their better established antibiotic and chemotherapeutic predecessors out of the field. It's more likely that the isonicotinyl hydrazides will be used in conjunction with conventional therapeutics like streptomycin.

Now that their synthetic hydrazides are safely in the hands of the medics, it would appear that clinical research directors Geoffrey Rake (Squibb) and Elmer Sevringhaus (Hoffmann-La Roche) could afford to sit back and take a breather. But the race is far from finished. New anti-TB drugs are popping up at frequent intervals. (The antibiotic, viomycin, now is being evaluated by Veterans Administration; Abbott Laboratories is beaver-busy on its own experimental antibiotic.)

Research directors, understandably tight-lipped, aren't saying much about work in progress. It's a cinch that the wrangle brought on by the hydrazide publicity won't make them any more loquacious.

•

Route to F: Researchers of Lederle Laboratories Div. (American Cyanamid Co.) report a simplified synthesis of the steroid, compound F. Physiological role and the potential therapeutic significance of the hormone are still not thoroughly understood. But some researchers speculate that it may prove more effective than cortisone in the treatment of arthritic diseases.

The new Lederle synthesis, like an earlier Merck method, obtains compound F by a direct conversion of cortisone. Lederle chemists report a 20% yield compared to 8% by the Merck technique.

•

New NSB Pilot: Chester I. Barnard, retiring president of Rockefeller Foundation, has taken over the chairmanship of National Science Board, recently vacated by Harvard's James B. Conant.

•

Daylight Glow: Three new dyes—Fluoreszengelb 10G, Fluoreszentrot BB and Fluoreszengrun 3C—are available from the German Farbenfabriken Bayer Leverkusen. Applicable to filter-printing methods, the dyes show a strong fluorogenic effect in daylight and ultraviolet, are recommended for advertising printing. The manufacturer also proposes the new products for plastic and lacquer applications. Although brightness and luminosity are good, light-fastness leaves something to be desired.

•

Right Climate: The wraps are off Union Oil Co.'s new 40-acre, $8-million research center at Brea, Calif. A number of unique features characterize the new layout. Example: outdoor labs for high-pressure research.

•

Cellulose Standards: Cellulose and cellulose derivatives are the bailiwicks of the newly organized technical committee D-23 of the American Society for Testing Materials. Immediate objectives are the study and formulation of standard methods for testing, specifying and defining terms.

•

Change of Scene: Part of Monsanto Chemical Co.'s inorganic research activities will soon be shifted from Anniston, Ala., to Dayton, O. Inorganic research at the new Dayton laboratories will remain under the wing of the company's Phosphate Division.

The move, a part of the general expansion of Phosphate Division's research activities, will also provide more elbow room for food, application and fundamental research.

•

Rocket Boost: A new $1 million research laboratory was recently dedicated at Redstone Arsenal's rocket and guided missile center, Huntsville, Ala. Fourth of its kind to go up at the Arsenal, the new lab will be operated

AUTOMOTIVE CASTINGS are cleaned continuously with VIRGO Molten Cleaner, a Hooker product.

Metal Producing—Metalworking ... easier with HOOKER CHEMICALS

HOOKER CHEMICALS
used in metal producing, metalworking

VIRGO® DESCALING SALT	Fast, safe, low-cost descaling of stainless and alloy steels.
VIRGO® MOLTEN CLEANER	Fast, safe, low-cost removal of sand and graphite from castings, forgings, fabricated parts.
CHLORINE	Refining aluminum, magnesium, other metals; treating boiler feed water.
CAUSTIC SODA	Desulfurizing steel and wrought iron; reclaiming aluminum.
MURIATIC ACID	Cleaning steels prior to plating; processing titanium, tungsten.
SODIUM SULFIDE	Sulfidizing oxidized lead and copper ores; refining titanium oxide.

METAL INDUSTRIES rely on Hooker for—

- Chemicals that make many jobs faster, easier.
- Shipments that arrive on schedule, in good order.
- Uniform purity that takes headaches out of processing.
- Willing help and advice in use and handling of chemicals.

YOUR INDUSTRY is in this picture, too—

Metal producing and metalworking are just two of more than 30 industrial "customers" served by Hooker as a basic producer of chlorine, caustic soda and chlorinated compounds.

Hooker research has helped many industries bring profitable new products to market, and iron out processing bottlenecks.

If you would like more information on chemicals we can supply to your industry, write today on your business letterhead for General Products List No. 100.

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

3 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.

NEW YORK, N. Y. • WILMINGTON, CALIF. • TACOMA, WASH.

HOOKER CHEMICALS®

2-183

SULFUR CHLORIDES • CHLOROBENZENES • BENZOIC ACID • SODIUM BENZOATE • ALUMINUM CHLORIDE • CHLORINATING AGENTS

DOW CORNING SILICONE NEWS
NEW FRONTIER EDITION
SEVENTH OF A SERIES

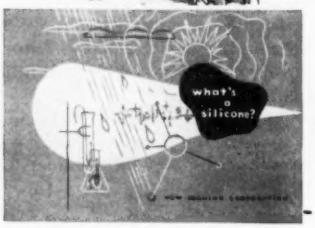
Like Paul Bunyon and Joe Magarac, like Pecos Bill and Davy Crockett, silicones were created to do the impossible. Silicones are fluids and resins that keep clothes and shoes and brick walls dry in the rain. They're compounds that keep radar from going blind on a foggy night. They're fluids that polish without rubbing.

They're rubber that won't melt on hot aircraft engine cylinders or freeze on switches that operate bomb bay doors at 100 degrees below zero. They're electrical insulating resins that double the power of electric motors or multiply by ten the life of electric machines.

Silicones are mold lubricants that eliminate 90% of the scrap in the rubber industry; save 80% of the cost of cleaning molds. They're paints that protect metal at 1000° F. They're work savers and life preservers, conservers of copper, protectors of metals, foam killers . . .

Get the complete story

told for the first time in a comprehensive and easy to read booklet entitled, "What's a Silicone?" It's written to be read profitably by scientists and engineers, business men and professional people.



Mail this coupon today for your FREE COPY of this new 32-page booklet

Address Dept. BR-15
DOW CORNING CORPORATION,
MIDLAND, MICHIGAN

Please send me a copy of
☐ "What's a Silicone?" new 32-page booklet
☐ "1951-52 Reference Guide to Dow Corning Silicone Products"

Name_____
Title_____ Company_____
Address_____
City_____ Zone_____ State_____

first in silicones
DOW CORNING CORPORATION
MIDLAND, MICHIGAN

RESEARCH . . . . . .

by Rohm & Haas Co. for investigations of guided missile propellants.

•

New Isotopes: Two previously unknown isotopes have been produced at Canada's atomic energy project, Chalk River, Ont. They are calcium-41 and actinium-229. Half-lives are 120,000 years and 66 minutes respectively.

•

Spreading Out: To meet rising space requirements, the Beckman organization (Beckman Instruments, Inc., Helipot Corp., Arnold O. Beckman, Inc.) has recently purchased 40 acres in the Fullerton-La Habra area of California. New facilities for instrument development and manufacture will be constructed on the tract.

•

Double-Edged Sword: Penicillin takes the blame for a mysterious decline in quality of cheeses from several leading Australian factories. Production slowdowns and failures were traced by researchers of Victorian Dept. of Agriculture to minute quantities of penicillin in the milk from cows that were receiving the antibiotic. Ill effects were caused by the drug's knockout effect on cheese-starter bacteria.

•

Polymer Duet: American Viscose Corp., Wilmington, Del., is the holder of a new patent (2,584,284) treating copolymers of trifluorochloroethylene and styrene. The patent describes the copolymerization product, containing in the polymer molecule 20-65 mole percent of trifluorochloroethylene and 35-80 mole percent of styrene.

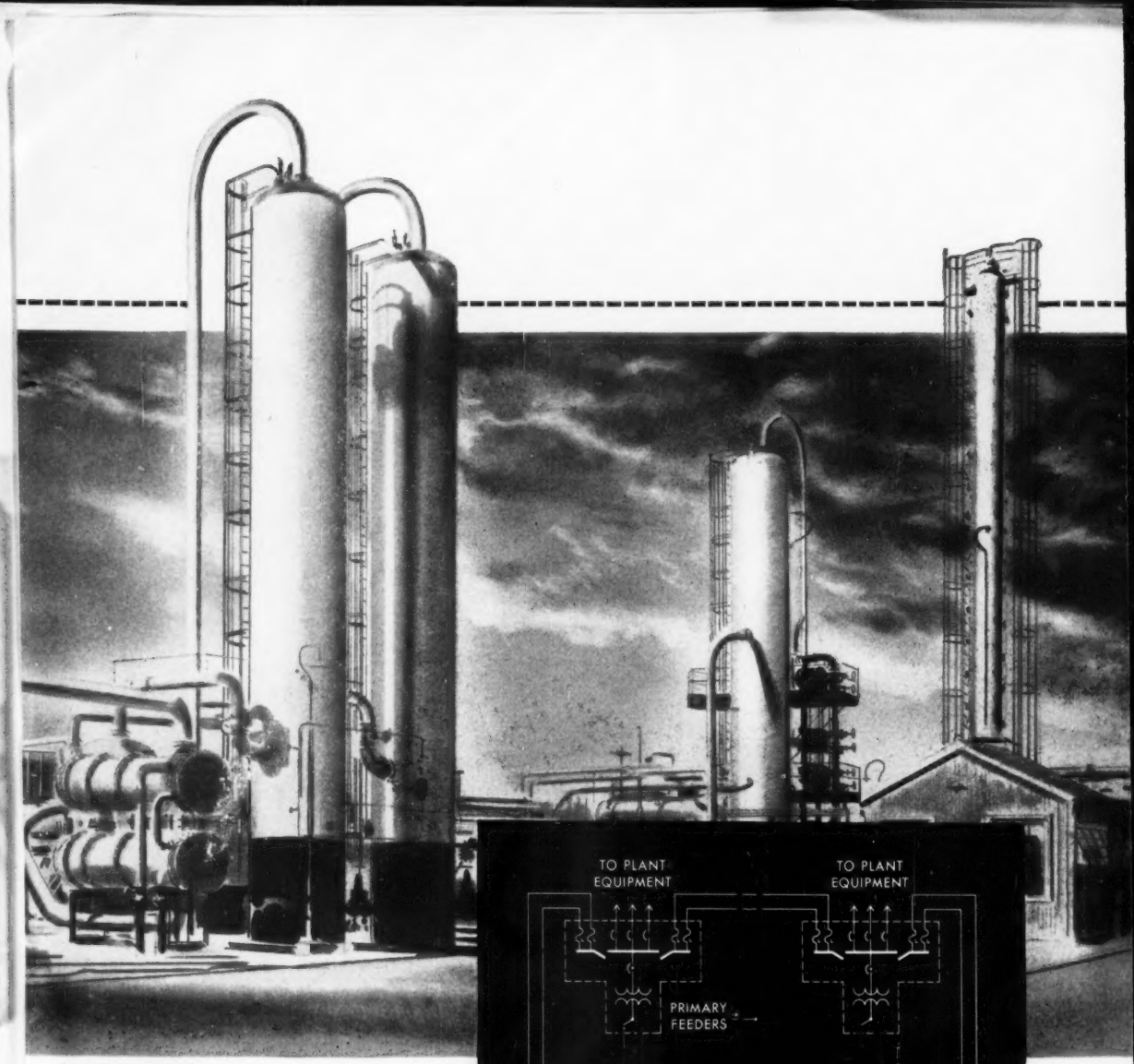
•

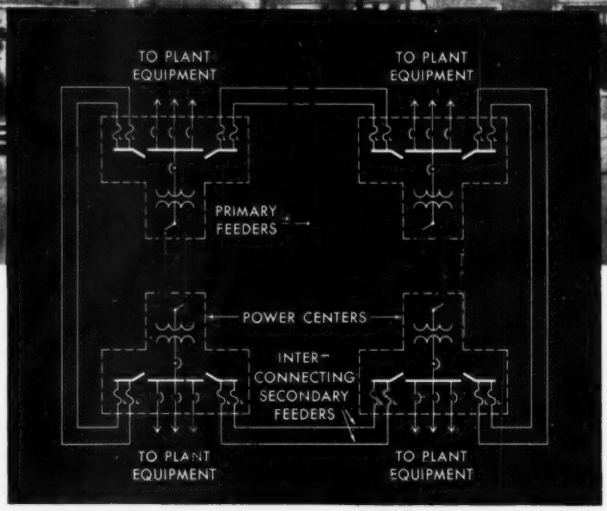
Double Entry: Two new products, dimethyl acetamide and 2,4,7-trinitrofluorenone, are newsmakers this week from Dajac Laboratories (Div. of Monomer-Polymer, Inc.), Leominster, Mass.

The former, a polar molecule (also known as acetyl dimethylamine), should be useful as a solvent for plastics, natural resins, inorganic salts and gases. Its solvent activity with hard-to-dissolve polymers like acrylonitrile is especially good. Added commercial possibility: recovery of olefins and acetylenes from process gas streams.

Qualitative reagent for polynuclear ring systems is the chemical niche filled by 2,4,7-trinitrofluorenone. The new reagent forms stable, sharp-melting complexes with polynuclear hydrocarbons and their substituted derivatives. Dajac says the complexes are more easily formed, more stable than the corresponding picrates. Literature listing all known derivatives is available from the company.

COMPLICATED?
Yes, but far more complicated are the many skills not visible in the production of petroleum wax.
It is those specialized skills, gained through our 50 years' experience, that you buy from MOORE & MUNGER. They are skills that extend from forward-looking research and development in our laboratories to the best possible technical advisory service and scientific marketing and distribution.
Users of petroleum wax cannot afford to do without them.
M
M
MOORE & MUNGER





PRIMARY SELECTIVE NETWORK SYSTEM

This system rates high on service continuity and flexibility. Two Primary Feeders supply power. If a fault occurs on one, the other Feeder takes over to keep service continuous. If a fault occurs in a Power Center, its section of the plant is supplied by the adjacent Power Centers through the interconnecting Secondary Feeders.

When additional power is needed, one Primary Feeder supplies the plant while a new Power Center is connected to the dead feeder. The plant keeps operating.

This is one of eleven basic systems, all with varying characteristics. Let experienced Westinghouse engineers help you plan the system best fitted to *your* operations.

Westinghouse

EQUIPMENT FOR THE CHEMICAL INDUSTRY

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

HOW MUCH DOES IT COST

when a distilling column goes "down"?

Probably more than you care to think about. But when power failure is at fault this costly threat can be eliminated. The answer:

A planned power distribution system!

When you modernize existing plants or build new ones, plan a system that *insures* service continuity . . . that gives you *alternate* power routes when electrical troubles occur. Moreover, make sure the system will be flexible . . . to permit load shifts and allow expansion without shutdown.

The Primary Selective Network shown on the opposite page is an example of a system that gives you this important service continuity and flexibility. But this is just one of the many systems you'll want to consider. Each has specific advantages depending on your particular operation. And Westinghouse can help you and your plant contractor design the system that *best* fits your requirements.

To help you make preliminary decisions we've prepared informative material covering all systems. Write for yours now. And remember, when you're building or modernizing, call in your Westinghouse engineers. With wide experience in power problems they can help you plan the one best system for your particular operation. J-94856

HERE'S REAL HELP FOR YOUR SYSTEM PLANNING

"Industrial Plant Distribution Systems": 34 fact-filled pages completely explain the eleven basic systems. Ask for B-4045.

A System Selector: pocket-sized selector card quickly shows the characteristics of each type.

A Full-Color Movie: sound movie dramatizes the economies of system planning. Ask your Westinghouse representative for a free showing.

Get this valuable information now. Call your Westinghouse office or write: Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

3 WAY CONTROL

mining
refining
manufacturing

INTERNATIONAL POTASH CHEMICALS

International

At its mine...at its refinery...at its chemical plant, *International* maintains a constant control over the production of potash salts and the processing of potash chemicals for many industrial purposes.

It's an exclusive *three-way-control* which means greater precision in production all along the line and offers you the advantages of consistent uniformity and deliveries that will fit your schedules.

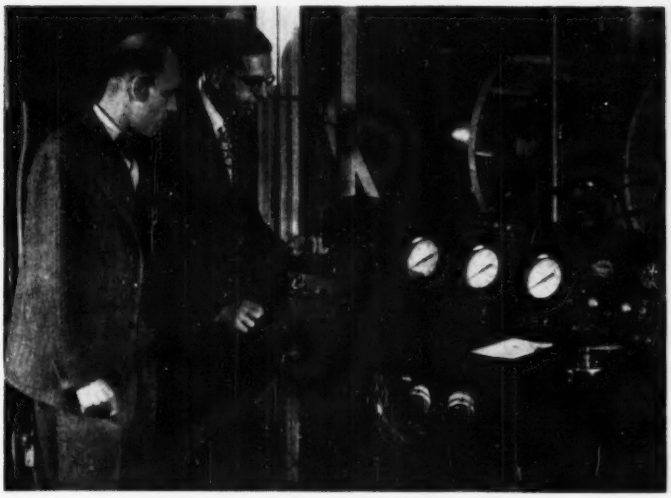
When you specify *International* potash chemicals, you can be *sure* of quality, of accuracy of specifications and of ample tonnages to satisfy your requirements.

Address Inquiries to Industrial Potash Department
20 North Wacker Drive, Chicago 6,
61 Broadway, New York 6.

potash chemicals Caustic Potash—All Standard Grades • Carbonate of Potash—All Standard Grades • Potassium Chloride—Refined and Technical Grades • Potassium Sulfate

International MINERALS & CHEMICAL CORPORATION potash division

INTERNATIONAL MINERALS & CHEMICAL CORPORATION
General Offices: 20 North Wacker Drive, Chicago 6



BAILEY (LEFT): Mistakes on paper instead of in steel.

Thermo Comes Down

Neil Bailey, Rensselaer mechanical engineering prof, is introducing a new theory in thermodynamics.

It can predict discontinuities and instabilities that can't be accounted for with classical theory.

Big difference is that Bailey looks at energy past a point rather than energy in a pound of substance.

"Revolutionary new concepts" may be a daily occurrence, if you're young, enthusiastic—and happen to be a press agent. But if thermodynamics is your bent, a revolutionary new concept may come along once in a lifetime. Yet, that's the best description for a new thermo theory now being introduced by Neil Bailey,* head of the mechanical engineering department at Rensselaer Poly (Troy, N.Y.).

His aim in the new theory is to explain some of the anomalies that exist between classical thermo theory and practice; further, he hopes to simplify the theory to a point where it will be more readily available as an everyday tool for design work.

As he figures it, classical theory was developed for the steam engine and is perfectly adequate for cases where expansion can take place in only one direction. But when a second dimension is introduced, certain discontinuities and instabilities occur which cannot be predicted from theory.

This discrepancy has long been apparent to designers of pumps, nozzles, compressors, ejectors and other pieces of equipment dealing with fluid flow. At first, they were inclined to blame it on the lack of precision in instruments used for measuring. That explanation didn't hold water, for the discrepancies became even more apparent with the development of better instruments.

The net result has been that much of the necessary design work has been on a trial-and-error basis. Bailey's theory, on the other hand, can account for and predict the discontinuities.

Just what that will mean is hard to measure at this point. For one thing, a lot hinges on the readiness with which Bailey's ideas are accepted. For another, designers have become adept at reconciling practice with theory by the appropriate use of empirical factors. Although it has been mostly trial-and-error, present efficiencies are high and, in all probability, Bailey's theory won't permit any striking gains on that score.

*Bailey presents a mathematical development of his new theory in the March issue of *Chemical Engineering; CE* editors accompany the article with a lucid interpretation of his work. Late this month, or early next, Bailey will offer his theory with supporting experimental data at a meeting in Troy. His book on the subject is now in press by McGraw-Hill Book Co.

Why are these fatty alcohols in such demand?

Does it not appear obvious that over two decades of original research in fatty alcohol production would result in products of the highest uniformity from lot to lot? In fact, it is exactly for this consistency that CACHALOT brand fatty alcohols are noted. And this is surely one good reason why these cetyl, oleyl, and stearyl alcohols are specified by many chemical users. There are over ten basic types of CACHALOT alcohols; you may even get special mixtures made to your order. This versatility makes it easy to choose the correct alcohol for your particular use. You may obtain an interesting booklet on CACHALOT by writing *M. Michel and Company, Inc.* at 90 Broad Street, New York 4, N. Y. They have been basic suppliers to chemical manufacturers for over twenty five years and their trade name for the best fatty alcohols is

Cachalot.®

It's fast and accurate . . .

Shoots 15 feet — a drop or a squirt. It's labeled Kroil — so you can grab it quickly when a frozen bolt, screw or bearing starts to cost expensive time or threaten production.

That is when KROIL creeps into millionth inch spaces to soften rust, dissolve gum and supply lubrication to loosen the parts. It's fast and it's positive.

"Kano Kroil always opens up the tight fitting covers on fire extinguishers for us. It is truly a wonderful preparation. We have found such covers we could not force off with a blow of a hammer. Several minutes' seepage of Kroil did the trick." so says a service organization for fire extinguishers.

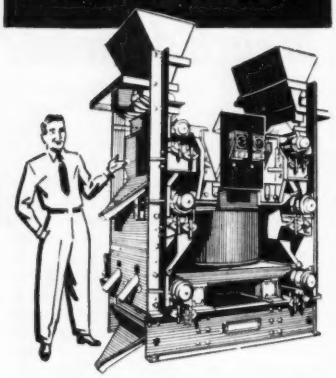
Kroilers are priced at $1.50 each and are well worth it. As an inducement to try Kroil we offer the combination of one Kroiler and one gallon of Kroil—(listed at $3.50) for $4.75, f.o.b. factory.

If you are not one of the 9,500 industrial plants already using Kroil, send for a gallon on the proposition that it will loosen the most stubborn frozen part or you get your money back.

KANO LABORATORIES

1063 Thompson Lane, Nashville 11, Tenn.

BETTER *Products*
BETTER *Profits*
NEW *Markets*



. . . Through More Exacting
MAGNETIC SEPARATION
of dry granular material
by EXOLON
Magnetic Separators

Purification of your material through the use of EXOLON High Intensity Magnetic Separator may improve your product, increase your profits or open up new markets for your products. Powerful magnetic fields with magnetized rotors and adjustable knife edge dividers for separating streams of weakly magnetic material produce uniform high-level results. Your yields are increased; your quality of concentrates is increased; involved chemical treatment may be eliminated and valuable materials recovered. Higher quality products find new markets open that were unavailable before. Let us help you analyze your separation problems — *today*.

WRITE FOR FREE FOLDER

covering EXOLON Magnetic Separators in detail. Send a sample of your material for FREE test to determine your particular separation problem.

THE EXOLON COMPANY
952 E. NIAGARA ST., TONAWANDA, N.Y.

If accepted, Bailey's new thermo theory will mean:

- **Possibility for increased efficiency for pumps, turbines, etc.**
- **Revision of thermo books, steam tables, gas tables.**
- **New computed efficiencies for pumps, turbines.**
- **No change in chemical thermo for reaction equilibria, heat balances.**
- **But entropy will be out; chemical engineers will want to streamline their thinking.**

What it will do, is put design on a more scientific basis. As Bailey puts it: "The engineer's only excuse for existence is to make mistakes on paper—rather than in steel. If you've got an engineering problem and are willing to give me enough time and money, I can solve it without applying engineering principles. But if the problem is even fairly complex, chances are that you won't have enough money, I won't have enough time."

Moreover, acceptance of Bailey's theory will mean that large portions of existing books on thermodynamics and related fields will have to be rewritten. Tables for gases and vapor, as well as computed efficiencies for boilers and turbines, will have to be revised.

Chemical engineers, along with others, will feel the impact of the new theory. Although chemical thermodynamics, involving reaction equilibria and heat balances will remain unaffected, at least temporarily, Bailey's theory eliminates such concepts as entropy and enthalpy. Chemical engineers will want to streamline their thinking along the new lines. In any case, it's a safe bet that they'll be among the first to study and approve —or disprove—Bailey's theory.

Classical Error: It's impossible to do justice to Bailey's theory in anything

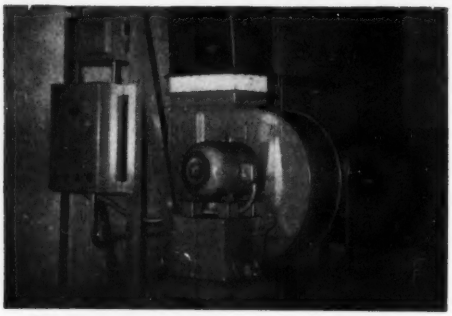
Pumping Without Packing

INVENTOR WILLIAM GEMEINHARDT puts his new pump through its paces at a laboratory of the Drexel Institute, Phila. (where it was developed) as Drexel President James Creese looks on. Big feature of the Vibro Pump, as Gemeinhardt has dubbed it, is that it operates on a vibratory principle, needs no packing, thus eliminates the need for lubrication. Gemeinhardt says there is no chance for either leakage of the material or contamination. He adds it has only two main parts and can be dismantled and cleaned in a matter of minutes.

There is no substitute for kraft!
KRAFT BAG made-to-order heavy-duty multi-wall shipping sacks are
DEPENDABLE EXPENDABLES
The primary purpose of a shipping sack is to provide economical protection in handling of your product from the filling machine to the ultimate consumer.
Only kraft multi-walls give you such dependable protection at low cost.
Kraft Bag Multi-Walls are especially dependable and economical because every single phase of their production, from pulp and paper to the final sack, is made under rigid quality control, right in our own integrated plants. ● We invite your inquiries.
2 to 6 ply, plain or printed, 1 to 4 colors
Sewn Valve
Pasted Valve
Sewn Open Mouth
Flat Sewn Open Mouth
Flat Sewn Valve
Pasted Open Mouth
KRAFT BAG CORPORATION
GILMAN PAPER COMPANY SUBSIDIARY
630 Fifth Avenue, New York 20, N.Y.
Daily News Bldg., Chicago 6, Ill.
DEPENDABLE AS A SOURCE . . .
DEPENDABLE AS A SERVICE . . .
Gilman PAPER CO.
St. Marys Kraft Corp.
Gummed Tape Div.
The Gilman Corp.
Kraft Bag Corp.
KRAFT BAG CORPORATION
Plants at
St. Marys, Georgia and Gilman, Vermont
If your product fits into a bag — we'll make the bag to fit your product.

"Buffalo" Tips on Getting the Best Service from your Fans

ISOLATE NOISE FROM THE SYSTEM

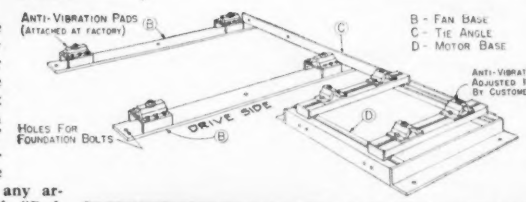


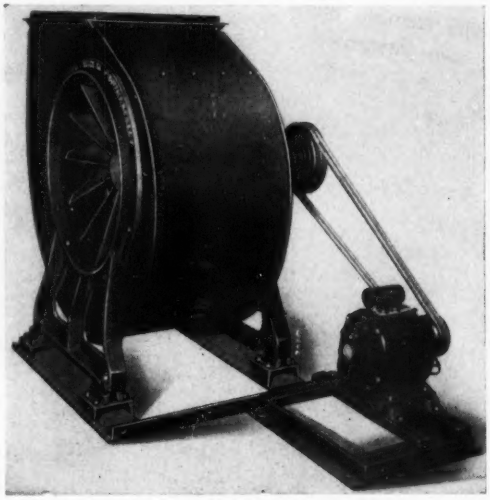
1. With canvas duct-to-fan connections

Today's correctly designed fan is a quiet running fan. However, any noise or vibration in the fan or motor can be transmitted throughout the ducts. Canvas or other flexible connecting material can isolate much of the noise at its source.

2. With rubber insulation base

Another place to isolate any vibration or noise is at the fan base. At right, is shown the "Buffalo" Silent Floating Fan base adaptable to any arrangement of "Buffalo" Limit-Load Fan. Adjustable anti-vibration pads effectively insulate the fan from the foundation, as far as noise is concerned. "Buffalo" Limit-Load Fans are extremely quiet to start with, since all wheels are dynamically balanced at the factory for vibrationless operation. Also, "Buffalo" backward double curved blades, special scroll housing shape and inlet guide vanes further reduce noise.


ANTI-VIBRATION PADS (ATTACHED AT FACTORY)
B - FAN BASE
C - TIE ANGLE
D - MOTOR BASE
ANTI-VIBRATION PADS ADJUSTED IN FIELD BY CUSTOMER
HOLES FOR FOUNDATION BOLTS
DRIVE SIDE



"Buffalo"
Limit-Load Fan

with silent, floating base. Sizes available from 600 to 500,000 cfm.

Write for Bulletin 3737.

First For Fans

BUFFALO FORGE COMPANY
189 MORTIMER STREET BUFFALO, NEW YORK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT EXHAUSTING PRESSURE BLOWING

less than a full-blown, rigorous mathematical development. However, the main points of departure from classical theory look like this:

The standard steady-flow equation for water, steam or gases deals with one pound of substance as it flows through the process. Total energy in the pound, assumed to be constant, consists of four parts: (1) potential energy, (2) kinetic energy of the moving mass, (3) internal energy of the molecules and (4) pressure times specific volume. This last measures the energy "stored" in the fluid because it is under pressure.

According to Bailey, (1) is an illusion and (4) is superfluous because (3) should give the total energy in the substance.

And, instead of looking at a pound of the substance, Bailey deals with energy as it flows past a point. His new equation states that energy flow past one point is the same as that past any other, provided energy is neither added nor removed.

His total energy is made up of three parts (1) internal energy in the pounds that pass one point in a second, (2) the kinetic energy that passes in one second and (3) a new concept which he calls "transmitted" energy.

To get the transmitted energy, he multiplies pressure by duct-suction area to determine the push on an imaginary moving piston. This push, times the velocity, measures the transmitted energy per second. And, he says, that "elusive, mysterious mistress which we've been chasing so long and calling entropy may be nothing more than a portion of transmitted energy."

Silica Savings

The Air Force's Air Materiel Command has signed a service contract with the Eagle Chemical Co. (Joliet, Ill.) to reactivate reclaimed silica gel through Eagle's drying process. Sale of used silica gel at all Air Force installations has been frozen and disposal officers told to ship all used silica gel directly to Eagle.

The Air Force pays 40¢ a pound for the 6 million lbs. of gel it consumes annually. By its contract with Eagle, it foresees a recovery of 3 million lbs. for roughly 55% of the cost of new silica gel. In terms of dollars, it adds up to a saving of almost $700,000.

Eagle's dehydration process is said to produce silica gel comparable to new material. Gel may be reclaimed up to nine times.

As an added bonus, the process re-

HOW DO YOU MEASURE PERFORMANCE?

Select Victor as your source of supply for phosphates, formates, and oxalates—a leading producer in the chemical industry! Most important, for 54 years Victor has provided industry with *dependable* service . . . plus purity, stability, and uniformity of its products.

Back of Victor's years of experience is a world of know-how. This knowledge, and our proved record of dependable performance, can benefit you. Write today for Victor's catalog of chemicals or information about Victor's service to your industry.

VICTOR CHEMICALS FOR INDUSTRIES

Aluminum Formate
Aluminum Phosphates
Monoammonium Phosphate
Diammonium Phosphate
Monocalcium Phosphates
Hicalcium Phosphate
Tricalcium Phosphate
Ferric Orthophosphate
Sodium Iron Pyrophosphate
Ferrophosphorus
Formic Acid
Oxalic Acid
Phosphoric Acids
Carbamide Phosphoric Acid
Phosphoric Anhydride
Phosphorus
Phosphorus Oxychloride
Phosphorus Trichloride
Photographic Chemicals
Potassium Phosphates
Hemisodium Phosphate
Monosodium Phosphate
Disodium Phosphates
Trisodium Phosphate
Tetrasodium Pyrophosphate
Sodium Tripolyphosphate
Sodium Acid Pyrophosphate
Sodium Formate
Sodium Oxalate
Stabilizers
Tetraethyl Pyrobase
Wetting Agents

INDUSTRIAL USES OF VICTOR CHEMICALS

Baking Powders
Bread—Yeast
Ceramics—Glass
Evaporated Milk
Cookies—Crackers
Cosmetics
Denture Cleaners
Detergents
Dyeing
Flameproofing
Food Enrichment
Insecticides
Laundering
Leather Tanning
Metals and Alloys
Metal Cleaning
Metal Plating
Nutrient Solutions
Oil Drilling Muds
Organic Chemical Mfg.
Paint—Varnish
Petroleum Refining
Pharmaceuticals
Phosphated Flour
Photo Developing
Plastics
Prepared Flour Mixes
Process Cheese
Pulp and Paper
Pyrotechnics—Munitions
Rustproofing
Salt
Self-Rising Flours
Soaps
Soft Drinks
Sugar
Textile Processing
Tooth Powder & Paste
Water Proofing
Water Treatment

VICTOR CHEMICAL WORKS

DEPENDABLE NAME IN CHEMICALS

VICTOR CHEMICAL WORKS

141 West Jackson Boulevard • Chicago 4, Illinois

A. R. Maas Chemical Co., Division, 4570 Ardine St., South Gate, Calif.

115—S

Prompt relief from packaging problems

More and more manufacturers are recognizing the merchandising magic of a package that is quick to stop the eye . . . because that's when sales are made. H & D Merchandising Boxes are proving most effective in prompting purchases through eye-catching display. For example: this colorful display box for Mintglo not only provides product protection, but sets up easily, supplies excellent trade-mark identification, makes it sales point effectively, and shows off the product to best advantage.

Whatever your product, whatever your packaging problem . . . the H & D Package Laboratory is at your service to provide a practical, economical solution. For the complete story on easier packing, better product protection, freight savings, "show boxing" display, write for the 14-volume "Little Packaging Library." Hinde & Dauch, 5209 Decatur St., Sandusky, O.

H&D®

HINDE & DAUCH

Authority on Packaging

Akron, Baltimore, Battle Creek, Mich., Bloomington, Ill., Buffalo, Chicago, Cincinnati, Cleveland, Columbus, Denver, Detroit, Fairfield, Conn., Findlay, Ohio, Gloucester City, N. J., Greensboro, N. C., Hoboken, Indianapolis, Jamestown, N. Y., Kansas City, Lenoir, N. C., Minneapolis, Omaha, Plymouth, Ind., Reading, Pa., Richmond, Va., Roanoke, Va., Rochester, Sandusky, Ohio, Shrewsbury, Mass., St. Louis, Toledo, Watertown, Mass.

quires no sulfuric acid. (Production of new silica gel requires a lb. of sulfuric acid for 3 lb. of new gel.) That means the Air Force will conserve about a million lbs. of sulfuric acid.

Brackish Bargain

A cheap, continuous process for getting fresh water from sea—or brackish*— water has long been the dream of the chemical industry. Now, Ionics, Inc. (Cambridge, Mass.) reports that its Permionic membranes fill the bill, can do the job a lot cheaper than any present commercial method.

Backed financially by the American Research and Development Corp., Ionics was formed in 1948 to commercialize some of the ion-exchange processes developed by Walter Juda, presently vice president and director of research. Early last year, it put its Permionic membranes on the market; but just last week, as it put them through a commercial demonstration, it revealed eye-opening cost estimates.

As yet, Ionics is unwilling to discuss either the mechanism of the process or the chemical composition of the membranes. It says merely that they are continuous sheets of an ion-exchange material that get their efficacy from a current of electricity that is passed through them.

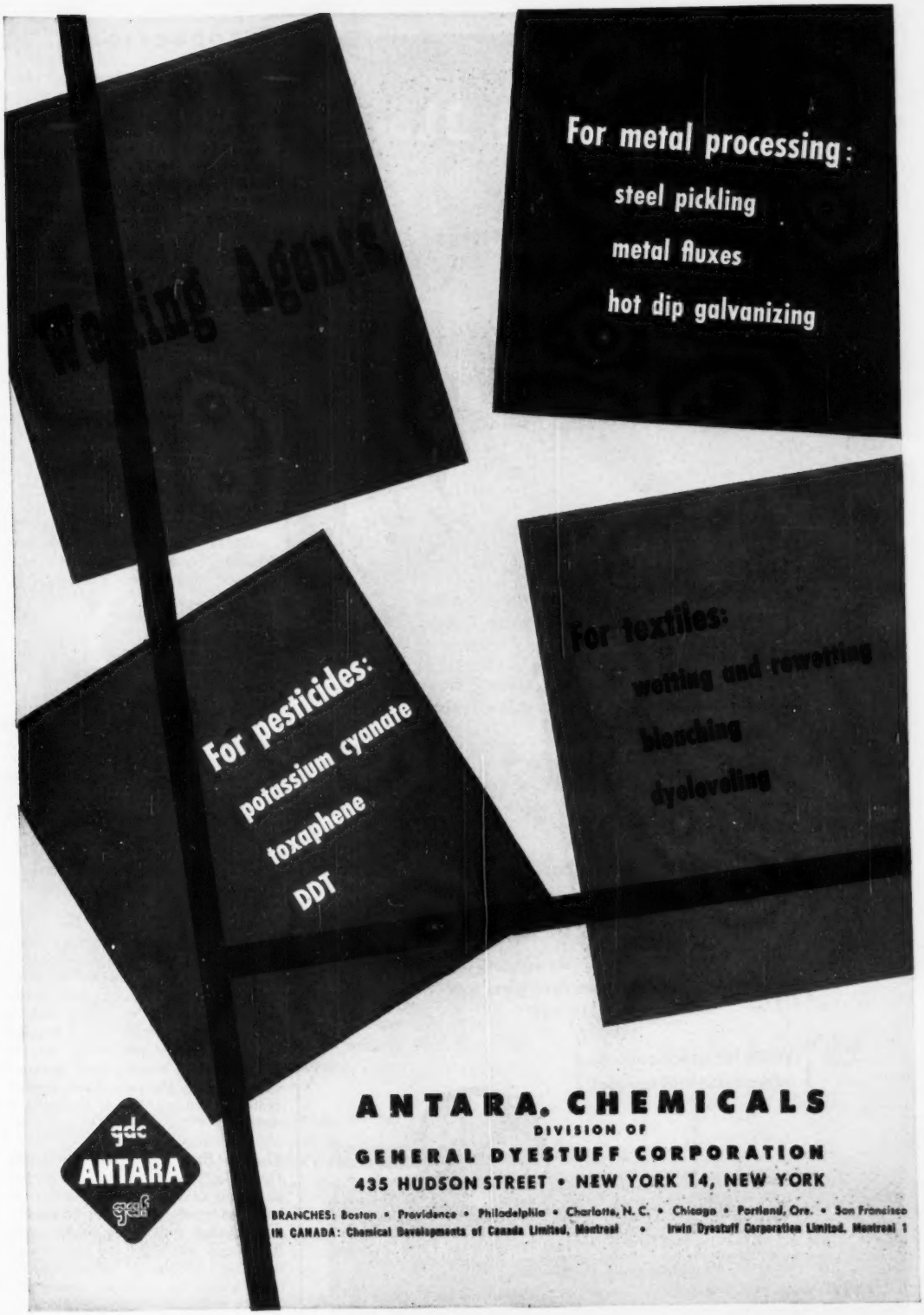
In practice, a stream of the water to be treated is sent through the membrane and emerges from the other side as two streams. In the case of seawater treatment one stream—made up of fresh water—accounts for two thirds of the total volume; the other stream is a highly concentrated solution of brine. The fresh water stream is suitable for drinking, agricultural or industrial use. Salt or magnesium can be extracted from the brine.

More Like It: Present costs of getting fresh water from the sea are too high to warrant serious consideration. Ionics President Edwin Gilliland (who is also a chemical engineering professor at M.I.T.) figures 100 kwh. would be needed to treat a thousand gal. of sea water in a vapor compression evaporator. With electric power at 3 mils a kwh., that means power costs alone would amount to 30¢ per thousand gal.

With Ionics' membranes, however, Gilliland estimates only 6¢ of power (20 kwh., 3 mils) for a thousand gal. at relatively low flow rates. Equipment and other costs would push that figure up to 15¢. In short, total costs for the membrane process would be just half the power costs for the best competitive process.

Since electric power required varies

* Brackish water is slightly saline. Its salt concentration is 10-20% that of sea water.


Wetting Agents
For metal processing:
steel pickling
metal fluxes
hot dip galvanizing
For pesticides:
potassium cyanate
toxaphene
DDT
For textiles:
wetting and rewetting
bleaching
dyeleveling
gdc
ANTARA
gaf
ANTARA CHEMICALS
DIVISION OF
GENERAL DYESTUFF CORPORATION
435 HUDSON STREET • NEW YORK 14, NEW YORK
BRANCHES: Boston • Providence • Philadelphia • Charlotte, N. C. • Chicago • Portland, Ore. • San Francisco
IN CANADA: Chemical Developments of Canada Limited, Montreal • Irwin Dyestuff Corporation Limited, Montreal 1

FATTY ALCOHOLS

now available in large quantities

saturated

STEARYL ALCOHOLS

Technical Grade . . . . (Sap. value 2 max)
Commercial Grade . . . (Sap. value 2 max)

CETYL ALCOHOLS

Cosmetic Grade . . . . . (Sap. value 2 max)
Commercial Grade . . . (Sap. value 3 max)

Shipped in: 50 lb. bags
200 lb. fiber drums
steam-coiled tank cars

unsaturated

Liquid Alcohols, High Cloud (Sap. value 3 max)
Liquid Alcohols, Low Cloud (Sap. value 3 max)

Shipped in: 400 lb. steel drums
tank cars

Sample packaged in convenient glass jars:
1/2 lb., 1 lb., 4 lb. sizes

Write for specifications, information and samples

Hydrofol PRODUCTS

ARCHER · DANIELS · MIDLAND COMPANY

Chemical Products Division
2191 West 110th Street · Cleveland 2, Ohio

PRODUCTION . . . . .

directly with the amount of salt removed (not the case with evaporators), savings are even more emphatic at lower concentrations. Gilliland estimates brackish water, for instance, can be treated for only 2¢ per thousand gal. In contrast, costs for a conventional ion-exchange process would be 35¢; for a vapor compression evaporator, 70¢.

Gilliland adds that the membranes require no regeneration and are usable for long periods of time. In tests thus far, they have operated satisfactorily for six months with no apparent deterioration. Currently, tests are under way to determine their effective life.

The big catch to the whole idea, of course, is that all the cost estimates are based on low-cost power. And the power consumed apparently varies geometrically rather than arithmetically with the flow rates. So Gilliland and Juda suggest that in a commercial installation, the purifiers would be set up in batteries of small units. That would have the additional advantage that any breakdown could be handled without stopping the whole process.

EQUIPMENT . . . .

Hand Pyrometer: A new hand pyrometer with two scales for quick temperature measurements of surfaces, liquids, gases and molten metals has been brought out by General Electric. The pyrometer comes with a surface tip, an immersion tip for the liquids and molten metals, and a two-pronged contact tip. The two scale ranges are 0-500 F and 0-1500 F. A switch permits change from one scale to the other.

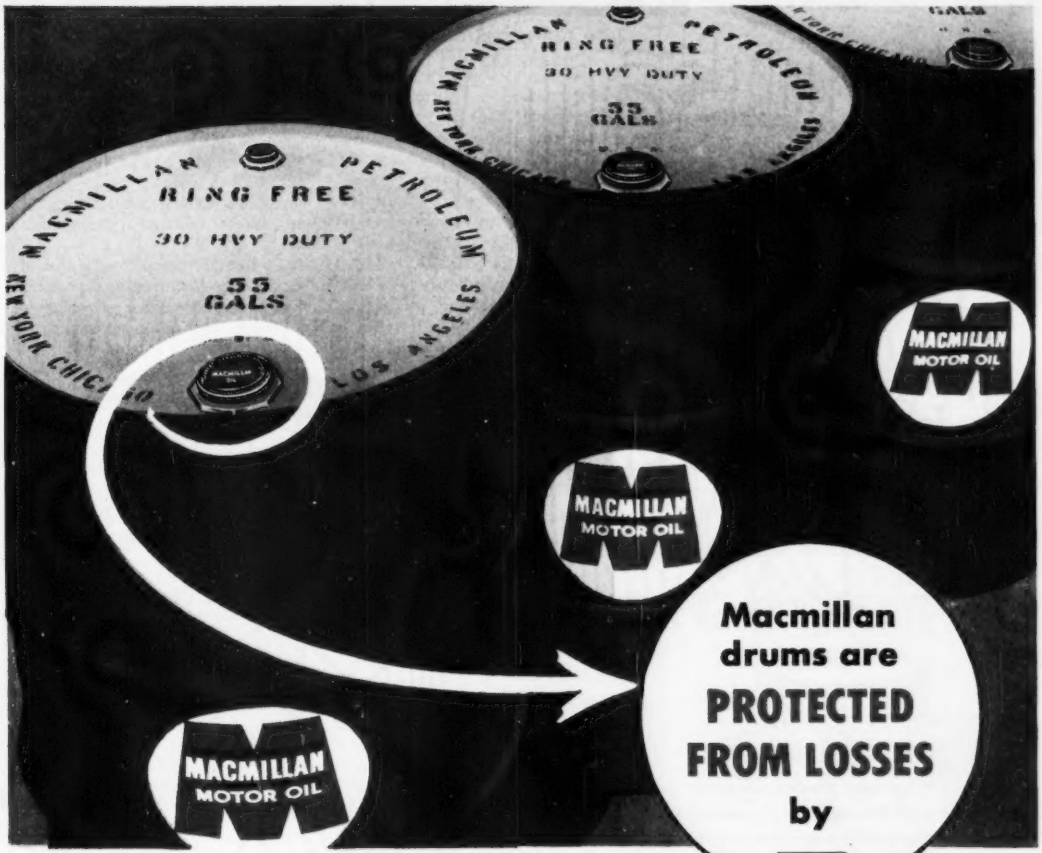
•

Line Purifier: The V.D. Anderson Co. is marketing a line purifier to clean up steam processing lines; protect small engines, turbines, other equipment from pipe scale and other solids; and to remove entrainment from vapor lines after distillations. It works on a centrifugal element which throws the solids and water to the wall of the purifier. Anderson says it requires no maintenance, has a high entrainment capacity, and small pressure drop through the unit. Each is warranted to remove 99% of the entrainment.

•

Flexible Hose: American Ventilating Hose Co. has added something new to its line of Flexaust hose: a flexible hose made of neoprene compounds, impregnated with nylon chafer duck. Reinforced with wire, the hose is said to be light weight but strong; suitable for vacuum or pressure operations dealing with abrasive dust collection; for gravity feeds, other operations.

MACMILLAN MAKES SURE
every drum shipment is *safe*



THE Macmillan Petroleum Corporation has built world-wide prestige for its Ring-Free Motor Oils because of its high standards of research and refining. And Macmillan *protects* its prestige by protecting every drum shipment with Tri-Sure* Closures.

Tri-Sure Closures have a Flange, Plug and Seal that keep *all* of the contents inside a drum, and *all* impurities out. They provide 100% security from leakage . . . contamination . . . substitution . . . and undetected pilferage.

Give this protection to *your* product, *your* prestige, and *your* customers' good will—by specifying "Tri-Sure Closures" on every drum order.

Tri-Sure* CLOSURES

**Reg. U. S. Pat. Off.*

**The "Tri-Sure" Trademark is a mark of reliability backed by 29 years serving industry. It tells your customers that genuine Tri-Sure Flanges (inserted with genuine Tri-Sure dies), Plugs and Seals have been used.*

AMERICAN FLANGE & MANUFACTURING CO. INC., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.
Tri-Sure Products Limited, St. Catharines, Ontario, Canada

WHERE you get it...

DOES make a difference

When you place your order with Barrett you're assured prompt, dependable service and top quality products, backed by 97 years of successful manufacturing experience.

WHEN YOU NEED A COAL-TAR SOLVENT

Phone your orders for express tank-truck deliveries

Boston	Malden 2-7460	† Los Angeles	Mutual 7948
† Buffalo	Delaware 3600	Newark	Mitchell 2-0960
Chicago	Bishop 7-4300	New York	Whitehall 4-0800
Cleveland	Cherry 1-5943	Philadelphia	Jefferson 3-3000
Detroit	Vinewood 2-2500	St. Louis	Lockhart 6510
† Indianapolis	Garfield 2076		

†Hi-Flash Solvent temporarily not available at this station.

BENZOL · TOLUOL
XYLOL · HI-FLASH SOLVENT

GET IT FROM... Barrett*

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

*Reg. U. S. Pat. Off.

DISTRIBUTION...

Major Market Opening

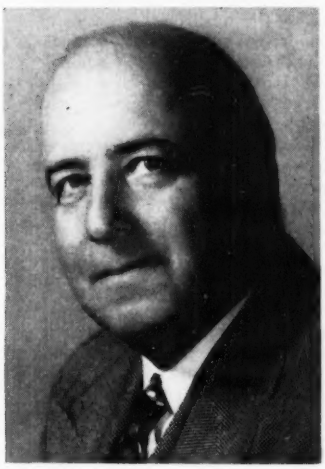
U.S. pharmaceutical companies see Far East as major market for the future sales of antibiotics, sulfa drugs, and other disease fighters.

Experts predict both export from the U.S. and production in the area itself to meet future needs for drugs.

Many American companies already in area, but others are sitting tight watching competition, growth of market.

The opening of India's first pharmaceutical plant under the guidance of American Cyanamid, and the completion of a 27,000 mile tour by two Pfizer executives, have thrown a spotlight on the growing interest of American pharmaceutical companies in the Far East.

Already there are a number of American pharmaceutical companies operating in the area, with some having branches or subsidiaries there.



PFIZER'S KANE: For vital markets, price cuts.

Ever since the war, and the following independence movements throughout the Far East, American drug houses have been keeping a sharp eye on the enormous potential need for their products in the disease-ridden countries.

Vital Importance: "These markets are of vital importance for the future of the American pharmaceutical industry . . ." emphasizes Jasper H. Kane, Pfizer's director of biochemical research and production.

The volume of antibiotic sales alone to the Far East in 1951 amounted to $25 million, with $5 million going to Japan and $6 million to India and the Philippines.

A peculiarity of much of the Far East market is that the demand is there but the buying power is not. This means that some way must be found to raise the living standard enough to enable the people to buy the drugs they need to eventually get on their feet.

As S. C. Moody, vice president and director of American Cyanamid, puts it, the idea behind Cyanamid's participation in the new dye and drug plant in India is, "If we can help . . . and thereby increase the standard of living . . . we automatically enlarge our markets and can properly share some of the resulting benefits."

At present, Moody points out, poverty and dollar restrictions limit the consumption of sulfa drugs by India's 350 million people to about one-tenth the volume consumed by 160 million Americans, who don't need them half as much. The problem is to get the people to the point where they can afford our products.

Two Approaches: Today's duel system of both imports and local production is not likely to change radically in the near future. Undoubtedly more American companies will build plants in the area either in conjunction with local capital, as Cyanamid has done, or in conjunction with the local governments. Pfizer is already considering the possibility of producing Terramycin in India, and the Indian government expects to open a penicillin plant, with aid from the U.N., in 1953.

On the other hand Pfizer has no actual plans to produce in the area, and is selling through local companies. Merck is doing the same thing, having distributorships in both India and the Philippines.

Export will certainly continue to be a major factor because of the recognized superiority of American production, which can do a quicker and better job. But local production will be necessary, both for nationalistic reasons, and economic reasons. It is estimated that the new Indian plant alone will save that country $500,000 of badly needed foreign exchange in the first year.

NEW FLUORESCENT CHEMICAL

CARLISLE—M.D.A.C.

Protein Substantive . . .
Highly Efficient . . .
Fluorescent and Soluble in—

- ACETONE
- ALCOHOLS
- BENZENE
- DIOXANE
- ETHYL ACETATE
- GLYCOLS
- KETONES
- LINSEED OIL
- VINYLS
- PLASTICIZERS
- MINERAL OIL
- PETROLEUM SOLVENTS
- ESTERS
- RESINS
- TOLUENE
- TURPENTINE
- VARNISH
- WAXES

FOR ADDITIONAL INFORMATION—SAMPLES — WRITE

CARLISLE CHEMICAL WORKS, INC.
READING 15, OHIO

MERCOID

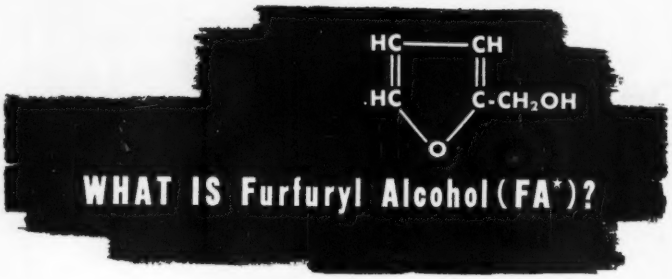
SOLVES INDUSTRY'S AUTOMATIC CONTROL PROBLEMS

THE ONLY 100% MERCURY SWITCH EQUIPPED CONTROLS

If you have a problem on the automatic control of pressure, temperature, liquid level, mechanical operations, etc., it will pay you to consult Mercoid's engineering staff — always at your service.

Complete Mercoid Catalog sent upon request.

THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO 41, ILL.



WHAT IS Furfuryl Alcohol (FA*)?

HERE'S WHAT IT IS: an amber colored primary alcohol containing a furan ring and having the following properties:

Specific gravity, 20/20°C.	1.134
Refractive index, n 20/D	1.484
Flash point (open cup), °C.	75.0
Cloud point, °C.	21.0

what will it do?

It will act as:

1. **A RESIN INGREDIENT.** Resins made from FA are chemically resistant to acids and to alkalies as well as to solvents. FA also reacts with phenolic compounds, formaldehyde, melamine, and urea to form resins with various modified properties.

2. **A WETTING AGENT.** In the manufacture of grinding wheels FA is a wettant plus a solvent for the phenolic resin binder and reacts with it in the curing cycle, resulting in a tough bond with minimum production of volatiles.

3. **A SOLVENT.** FA is an excellent solvent for nitrocellulose and many synthetic and natural resins; it is miscible with water, chloroform, coal tar solvents, and non-paraffinic hydrocarbon solvents.

4. **A DISPERSANT IN TEXTILE PRINTING.** Difficultly soluble dyes such as leuco vat ester salts are dispersed with FA and the storage stability of these solutions is improved.

Write for a copy of Technical Bulletin 83-B

★Reg. U. S. Pat. Off.

The Quaker Oats Company — CHEMICALS DEPT.

334E The Merchandise Mart, Chicago 54, Illinois

Eastern Sales Office
Room 534E, 120 Wall St., New York 5, N. Y.

In San Francisco, The Griffin Chemical Company • In Australia, Swift & Company, Pty. Ltd., Sydney • In Europe, Quaker Oats-Graanproducten N. V., Rotterdam, The Netherlands; Quaker Oats (France) S.A. 42, Rue Pasquier Paris 8e, France • In Japan, F. Kanematsu & Company, Ltd., Tokyo

DISTRIBUTION . . .

Competition: One serious flaw in the present Indian market is low-priced British competition. Through sterling area preferences the British are able to undersell American companies in India, particularly on penicillin. With other countries, and in the rest of the area, this is not generally the case.

In Thailand and the Philippines there is no commercial antibiotic production as yet, although the Thais are operating a pilot plant. In these countries all such drugs are imported from the U.S. and England, and they form a significant market. Japan alone in the area is producing large quantities of drugs. It is already self-sufficient in, and even exporting, penicillin.

In the more backward countries the governments are ready to extend almost any help to American businessmen who want to establish pharmaceutical plants there. Although the Indian government has screening and general research of its own under way, it realizes that it has a long way to go.

Price Cut Needed: At present, sales activities in the Far East are hampered by the relatively high price of antibiotics and other American drugs. This undoubtedly was a strong factor in the Indian-Cyanamid decision to produce sulfa drugs first, folic acid second, and Aureomycin last.

Sulfa drugs, specific against many diseases all but eliminated from the Western world, are low cost, easy to handle, and effective in the mass therapy needed in India.

In maintaining that local plants, such as Cyanamid's, would not harm American exports, Charles Werner, of Pfizer Overseas, points to the complicated techniques involved, and the know-how needed. But he might well be echoing Moody that the Far East is in the paradox that the more drugs they can produce locally, the more they will probably import in the future.

•

New Branch: Construction of Sharpe & Dohme's new brick and steel one-story Denver branch building has been completed and the new headquarters is open for business. The new branch will sell in all of Colorado, Wyoming, and Utah, and parts of Idaho, New Mexico, Nebraska, and South Dakota.

Patterned after the company's sixteen other domestic branches, the new building contains general offices, stock and shipping space.

•

Formaldehyde Pact: Standard Chemical Co., Ltd. will be distributor of the formaldehyde to be produced at the new Belleville, Ont., plant of Bakelite Co., division of Union Carbide and Carbon Corp.

Triples Production

They're all HEAT-SEALED

HEAT-SEAL coatings outspeed usual methods by as much as 2 or 3 times. Think of what that means to packagers in terms of increased production! Heat-Seal coatings are easy to use. They give positive adhesion to a wide variety of surfaces.

National's Heat-Seal coatings are already being used for many packaging applications. New uses are being developed all the time.

National can supply converters with:

Direct Heat-Seals— in lacquer, emulsion, and hot melt forms.

Delayed-Tack Heat-Seals—in emulsion form.

We'll be glad to send a technical representative to help you choose the right heat-seal for your packaging problem. Just clip and mail the coupon.

Labels for Glass Bottles

Labels for Transparent Tissue Wrapped Packages

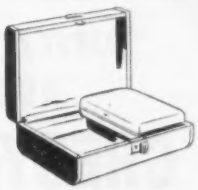
Individual Bandage Wraps

Individual Packets for Soup Mixes, Salt, Sugar, etc.

Closures on Plain and Wax-Glassine Bags

Milk Containers

Labels for Phonograph Records



Specialties—such as Cloth-to-Cardboard

National ADHESIVES

National Adhesives
270 Madison Avenue
New York 16, N. Y.

CW

YES—We're interested in *Heat-Seals* for _____ (application). Please have one of your representatives call on us.

Name_____ **Title**_____

Company_____

Address_____

City_____ **Zone**_____ **State**_____

Greeff

THIOPHENE

•

BENZONITRILE

Now available in Commercial Quantities

Sales Agents for
SOCONY-VACUUM OIL CO., INC.

R. W. GREEFF & CO., INC.
10 ROCKEFELLER PLAZA, NEW YORK, N. Y.
TRIBUNE TOWER, CHICAGO, ILLINOIS

DIRECT IMPORTERS
DUTY FREE
CRESYLIC ACID
99/100%
SPOT DELIVERY and for SHIPMENT
FIRST HALF of 1952

RN

RICHES-NELSON, INC.
Chemicals and Allied Products
342 MADISON AVENUE NEW YORK 17 N. Y.
MURRAY HILL 7-7267
RICHELCHEM N.Y.

BOOKS . . . .

The Essential Oils, Vol. V, by Ernest Guenther, D. Van Nostrand Co., Inc., New York, N.Y., xvii+507 pp., $9.75.

Like two previous volumes of the series, this fifth book treats the physicochemical properties, chemical composition, production and uses of individual essential oils. The oils are grouped according to the botanical families to which the corresponding plants belong.

Extrusion of Plastics, Rubber and Metals, by H. R. Simonds, A. J. Weith, and William Schack. Reinhold Publishing Corp., New York, N.Y.; ix+454 pp., $10.

Treatise on the subject of extrusion as a processing operation, covers the three major factors of the industry—equipment, process and materials. Two-thirds of book is devoted to plastics.

Pulp and Paper, Vol. I, by James P. Casey. Interscience Publishers, Inc., New York, N.Y.; xxiii+795 pp., $15.

The first of two volumes on the principles of papermaking, this volume deals with the chemical aspect, whereas the second will cover the engineering branch. Stressing the fundamental chemistry of paper and papermaking, the author makes a study of the paper industry's raw materials and processes —almost from the viewpoint of the colloid and physical chemist.

MEETINGS . .

Natl. Assn. of Corrosion Engineers, annual conf. & exhibition, Buccaneer Hotel, Galveston, Mar. 10-14.

Natl. Farm Chemurgic Council, annual conf., Statler Hotel, St. Louis, Mar. 11-12.

Soc. of Plastics Ind., Inc., national plastics exposition, Convention Hall, Phila., Mar. 11-14.

Amer. Inst. of Chem. Engineers, Atlanta Biltmore Hotel, Atlanta, Mar. 16-19.

Coml. Chem. Dev. Assn., annual open meeting, Statler Hotel, N.Y., Mar. 20.

Chicago Intl. Trade Fair, Navy Pier, Chicago, Mar. 22-April 6.

Natl. Sanitary Supply Assn., convention, Conrad Hilton Hotel, Chicago, Mar. 23-26.

Amer. Chem. Soc., national meeting, Buffalo, Mar. 23-27.

Packaging Machinery Manufacturers Inst., semi-annual meeting, Dennis Hotel, Atlantic City, Mar. 30-31.

451

Third Man In

Market for oxidized microcrystalline waxes brings in another producer, Bareco Oil, to join Warwick Chemical and Petrolite.

Main use for waxes is in emulsion polishes, now experiencing seasonal sales boom. Advantages: They're cheap, easily emulsified, offer stable supply from domestic sources, improve polish characteristics.

Cautiously, feeling out the market as it goes, another firm has recently begun production of oxidized microcrystalline waxes. Bareco Oil Co. (Tulsa) thus joins Warwick Wax Co. (division of Sun Chemical) and the Petrolite Corp., Ltd., as the third producer of these petroleum based waxes.

None of these three wax makers—a clan notorious for keeping mum on markets, prospects, and production—will say just how large a market they are shooting for. But Bareco can probably produce as much as either Warwick or Petrolite, and no doubt hopes for a chunk of the sales that have doubled in the past few weeks. (A seasonal spurt; polish formulators are readying their spring lines.)

A slight indication of the market possibilities can be drawn from a look at the imported vegetable wax usage in past years. The polish industry consumed about ⅓ of the 1950 imports of 30⅓ million pounds of waxes (including 20½ million pounds of carnauba). Thus a potential maximum close to 10 million can be guessed, but undoubtedly the sales are actually far from this.

What's the Use: Oxidized microcrystalline waxes (OMC), are easily emulsified, moderately hard waxes made from the tank-bottom residue in petroleum refining. Ninety percent of the current production goes into no-rub floor polishes, and at least 80% of the polish makers use it with, or as a substitute for, carnauba wax. Cost of OMC waxes is 34-40¢ per pound; carnauba, $1.20 per pound. Shellac, another widely used substitute and extender for waxes, sells for about 70¢ per pound.

But recently a polish containing only OMC waxes with phenol formaldehyde resins (example: Durez 300) passed Federal specifications for floor wax polishes. As long as carnauba, available only from abroad and at prices which are never stable, continues to sell for more than a dollar a pound, formulators have reason to experiment.

Some OMC has been used as a protective fruit coating, but it cannot meet the price of the paraffin waxes, which sell for about 6¢ per pound, and are quite satisfactory.

Oil Field to Floor: Warwick was first to produce these oxidized microcrystalline waxes, at Chanute, Kansas, in 1945. About 1947, Petrolite (at Kilgore, Texas) got in the business, and now Bareco is getting set for capacity production.

East Texas crude oils have been found best as sources of the wax, although others may be used. The sludge left after fractional distillation is the wax source. De-waxing to extract the petrolatum and microcrystalline wax is generally done by processing the residue with methyl ethyl ketone, then chilling and filtering the solution. The resultant crude petrolatum is "de-oiled," much like the de-waxing process, to separate the microcrystalline wax from the paraffins, then is further refined.

Unoxidized microcrystalline wax has a variety of uses. It is believed to consist of branched chain molecules with molecular weights of 600-900, and has a much finer crystal than paraffin. It finds extensive application in carbon paper manufacture, paper bonding, and fruit coating.

But, unless oxidized, the light colored wax cannot be successfully emulsified. Consequently, using special blowers, the wax is oxidized with air in the presence of catalysts of manganese or cobalt. (Producers are vague here again; none will say what he is using. There was a complaint at one time that the manganese catalyzed waxes affected undesirably rubber tiles to which the wax had been applied frequently.). The end products of reaction are easily emulsified waxes with saponification numbers of 45-50, and acid numbers of 13-15, and melting points of 185-190.

OMC isn't quite as hard as carnauba, but is said to offer several advantages: It is of standard quality; it has the "tack" needed to prevent too-slippery floor finishes; it has a high gloss. And should the natural products drop in price, OMC would still be used—mixed with carnauba, it makes a better polish.

Now the only worry confronting the

Documents in Cellulose Sandwich

"PLAN OF WEST POINT, 1818," is one of the vital documents at the National Archives Building in Washington to be preserved in cellulose acetate. The records to be treated are fumigated three hours in a mixture of 90% carbon dioxide and 10% ethylene oxide, then coated with plastic under hydraulic pressure. An estimated 6,000-10,000 lbs. of the fumigant and 7,500 lbs. of cellulose acetate will be required.

improved polyethylene jug . . .

pours easily!

virtually unbreakable!

rugged construction!

Handle mineral acids and hydrofluoric acid safely! Lift this container by its ring handle . . . pour the contents easily through the drip-proof spout.

Perfect container for expensive oils and extracts...it's impervious to mineral acids also hydrofluoric acid up to 60%. One gallon capacity. Shipped with both a screw cap and drip-proof polyethylene spout.

TEST IT! SEND FOR SAMPLE TODAY!

Complete $10.00—Special Quantity Discounts

Sold and Distributed Exclusively by

W. Miller Cook Associates Inc.

Union Commerce Building

Cleveland 14, Ohio

A PRODUCT OF THE STEEL CITY MFG. CO.

(His business paper . . . of course)

Any man with business on his mind puts his mind on his business paper. The **Best Informed Men in your Field** *find* time to read . . . not just a page or two, but thoroughly. And *regularly*. It pays off in fresh approaches to tough problems, close touch with your market. Read every issue . . . editorials and advertising. Both are jamful of news and "how-to" that will keep *you* one of the **Best Informed Men in your Field,** too.

CHEMICAL WEEK

One of a series of ads prepared by
THE ASSOCIATED BUSINESS PUBLICATIONS

producers is the possibility of an oil workers strike, postponed 10 days last week. Otherwise prospects seem as bright as OMC-waxed parquet.

Antifreeze Manual

The first edition of the American Society for Testing Materials' manual on engine antifreezes is just out. The book is designed to provide in compact, convenient form nine ASTM methods of test and specifications pertaining to engine antifreezes.

Methods included cover sampling and preparing solutions of engine antifreezes; freezing point of solutions; physical tests for boiling point of engine antifreezes, and specific gravity of concentrated antifreezes by the hydrometer; chemical tests for ash content and reserve alkalinity of concentrate engine antifreezes, and for water in concentrated engine antifreeze by the iodine reagent method.

Specifications cover ASTM thermometers and hydrometer-thermometer field tester for engine antifreezes.

Copies of this 38-page manual, in a paper cover, may be obtained from the society, 1916 Race Street, Philadelphia 3, Pa.; price is $1.00.

Electrified Dusts

Negatively charging pesticidal dust particles has been advanced again as a more economical method of applying insecticides. But it is based on the assumption that growing plants have a positive electrical charge—and this is doubted by many authorities.

Claiming a 60% saving in dust, more effective coverage because of dust contact on the leaf undersides, and a safe and low-cost method of application, Henry D. Bowen is the latest to develop an electrostatic dusting technique.

Bowen, a graduate research assistant at Michigan State College, has devised a method of electrifying an ordinary field duster, using a 6 volt power source stepped up to the 12,000-20,000 v. range. A ball-tipped wire is suspended in the nozzle, and the field it creates charges negatively the dust forced through the orifice. The particles are thus dispersed by their charges, and presumably attracted to the plant.

The USDA has somewhat different views as to the feasibility of the idea. The Department has investigated the possibilities extensively, and was eventually forced to abandon efforts because of the lack of success.

There is further USDA skepticism concerning the electrical character of the plants. For many experts believe there is no definite proof of the positive-charge assumption, and suggest that the charge on plants is constantly changing from positive to negative.

Bowen got best results with particles of 5 micron median mass diameter (somewhat smaller than most dusts), but predicts success with fogs, and aerosols. USDA declares liquid particles will hold a charge only for a very short time.

Nevertheless, despite doubts, the Agriculture Department plans to investigate Bowen's work.

Rat Blaster

Another blast at rodents is being readied by Geigy and Co. Called Tomorin*, the new rat toxicant resulted from study of blood anticoagulants at the University of Wisconsin; field testing is still going on, but Geigy hopes to have Tomorin on the market by fall of '52.

Although the great advantage of Tomorin lies in its usefulness as a "tracking" powder (scattered in the path of the rodents, it is picked up on the feet and taken into the body when the animal scratches), it will be marketed in this country as a bait poison. Reason: Public Health Service fears food contamination. Abroad, however, it will be sold as a tracking powder.

•

Parke-Davis Overseas: Ground has just been broken in Sidney, Australia for a new $2 million model laboratory for Parke-Davis and Co. The plant, on a 27-acre site on Botany Bay, will double P-D's facilities in Australia; it has had a branch which employs 350 at Sidney since 1903.

•

Paper Rosin: A fortified rosin, Dry Pexal, Grade 240, is now being marketed by Hercules Powder Co.'s Paper Makers Chemical Dept. Use is in sizing paper and paper-board.

•

Paint Spray Aid: Pennsylvania Salt Mfg. Co. has developed a new conditioning agent for industrial paint spray booths. Called PB-1, it is used in the water circulating systems to prevent adhesion of paint to the curtain wall, to assist the water cascade in preventing escape of paint into the atmosphere. Made in Wyandotte, Mich.; sold in 400-lb drums.

•

IPC West: Monsanto's Santa Clara

* Chemically, 3-(α-p-chlorophenyl-β-acetylethyl) -4-hydroxycoumarin; warfarin, also a Wisconsin discovery, is 3-(α-phenyl-β-acetylethyl)-4-hydroxycoumarin.

The light way to ship is in Continental Fibre Drums

These light-weight durable shipping containers are designed for real economy. They bring you appreciable savings on shipping charges — savings that can amount to substantial sums in the face of today's high freight rates. And they also save you worthwhile amounts on export shipments where import duties are figured on gross weight.

Continental drums are tough and sturdy. They stand up to the abuse of long freight hauls without splitting, cracking or leaking. This means you can give expensive or dangerous materials adequate shipping protection at minimum shipping cost. Closures seal securely, yet go on and off easily.

These drums can be printed or paint sprayed to become colorful, effective "traveling salesmen!" Continental fibre drums are available in a full line of sizes, from 12 gallons to 75. Call or write your nearest office for complete details.

CONTINENTAL CAN COMPANY

Fibre Drum Division

Van Wert, Ohio

NEW YORK • PHILADELPHIA • PITTSBURGH • TONAWANDA • CLEVELAND
CHICAGO • SAN FRANCISCO • ST. LOUIS • LOS ANGELES • EAU CLAIRE

ORES • METALS • METALLIC RESIDUES • FERRO-ALLOYS

COPPER • TIN • LEAD • MERCURY • TUNGSTEN • ZINC • CHROME • ANTIMONY • TANTALITE • COLUMBITE • MANGANESE • MOLYBDENUM • ZIRCON • BERYLLIUM • RUTILE • NICKEL • CADMIUM • ALUMINUM • MONEL • ARSENIC

Philipp Brothers, Inc.

70 PINE STREET • NEW YORK 5, N. Y.

BOwling Green 9-1313 Cables: PHIBRO, New York

PHILIPP BROTHERS (Holland) N.V.,
37, Roemer Visscherstraat, Amsterdam

PHILIPP BROTHERS (Canada) Ltd.,
1440 St. Catherine St. W., Montreal, Quebec

AFFILIATED COMPANIES THROUGHOUT THE WORLD

Phibro

CHEMICALS
For Tanneries

FORMIC ACID • CALCIUM & SODIUM FORMATE
SODIUM SULPHIDE and SULPHHYDRATE
BICARBONATE OF SODA • OXALIC ACID
BICHROMATE of SODA • AMMONIUM SULPHATE
LACTIC ACID

In tank car, tank wagon, carload drums and less carload drums

Philipp Brothers Chemicals, Inc.

37 WALL STREET • NEW YORK 5, N. Y.

HAnover 2-4676

Cable Address: PHIBROCHEM NEW YORK

BOSTON 10, MASS. • PORTLAND, CONN. • PHILADELPHIA 6, PA.

BALTIMORE 1, MD. • PROVIDENCE 3, R.I.

SPECIALTIES . . . .

(Calif.) division has gone into commercial production of the weed killer IPC (isopropyl N-phenyl carbamate).

•

And Sural Too: The Federal Trade Commission has filed an initial decision—similar to that filed on Dolcin's makers (*CW, Feb. 23*)—prohibiting Norlon Corp., from advertising its product Sural as a cure or effective treatment for arthritic or rheumatic conditions.

•

Naco Rebuilds: Naco Fertilizer Co. has begun constructing a new $650,000 fertilizer plant near Ft. Pearce, Fla., to replace the one destroyed by fire last Nov. 3. The new plant will have a capacity of 75,000 tons yearly.

•

Flotation Frother: Dow Chemical has developed a new synthetic, water-soluble, flotation frother for the mining industry called Dow Froth 250.

•

Light Package: Use of a polyethylene bottle for scalp remedies cut postage from 32¢ to 8¢, eliminated breakage, Ward Laboratories (NYC) has found; Plax Corp. (Hartford, Conn.) supplied the bottle.

•

Windshield Sprayer: Cee Clear is a new device made by Plaze, Inc. (St. Louis). Designed for autos with divided windshields, the nozzle for applying cleaning solution is connected with a polyethylene tube to a bottle of the same material mounted behind the rear-view mirror; bottle is both fluid source and sprayer.

•

Plastic Finish: A plastic strip finish for paint masking and light protective uses is offered by United Lacquer (Linden, N.J.). Called VC-12, it is available in clear and tinted clears.

•

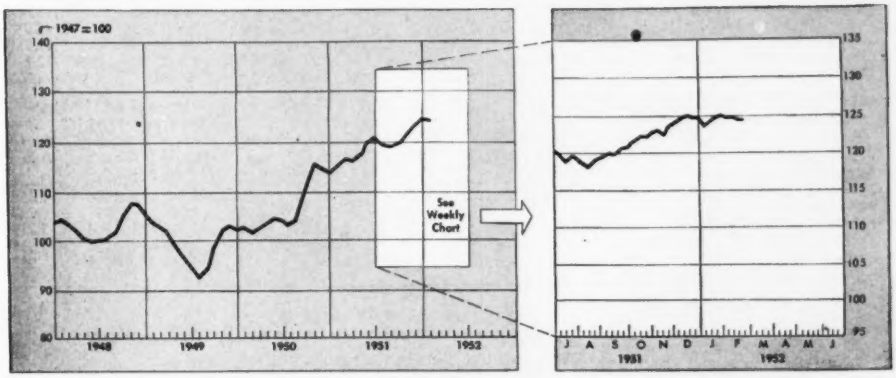
More Plant Food: Na-Churs Plant Food Co., has just opened a new factory in Marietta, O. for manufacture of its liquid fertilizers.

In Clarksville, Tenn., the Tennessee Plant Food Co. has been sold, and the new owners, Soil Builders, Inc., plans large expansion. Enlargement hinges on feasibility of now-testing process to heat-dry Tennessee dolomite, coal dust, and ammonium sulfate together to make a fertilizer without using sulfuric acid.

PICTURES IN THIS ISSUE:

Cover (top)—E. I. DuPont de Nemours & Co.; Cover (bottom) & p. 21—Wide World; p. 32—Jules Schick; p. 41—Chas. Pfizer & Co.

MARKETS . . . . . .



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries

MARKET LETTER

Chlorine is not nearly as tight as many consumers think. Only the shortage of pressure tankcars for shipping kept production off the market in January and February that could have helped meet demand.

But within another six weeks, supplies will be sparse. Reason: Warm-weather will boost water treatment requirements.

Office of International Trade will have to play Solomon on applications for copper sulfate exports. OIT had decided to permit 25 million pounds to be shipped overseas in this first quarter of 1952. But so far, the agency has rejected applications for 53 million pounds, and pending applications are still well above the quota.

Here's further proof on cellophane easing since it came off voluntary industry allocation about two weeks ago. Supplies are more than ample even though one raw material—carbon bisulfide—is still hard to get.

One example: Du Pont's Yerkes plant near Buffalo has cut output 12% because of top-heavy inventories of converters.

Fixed nitrogen producers responded to DPA's request for another 430 thousand tons capacity by applying for a million. Good bet: They don't all have their eye on fertilizers. Some other sure-fire growers include nitric acid, synthetic textiles, metal recovery, and ammonium bisulfite pulping.

Having accumulated a stockpile of tetraethyl lead, the Petroleum Administration for Defense has taken note of increased output coming in this year. Result: Refiners will get 7% more for the year beginning March 1.

Producers of synthetic detergents—until lately starved for benzene—are again laying plans to pre-empt a bigger share of the packaged cleaners market. (Synthetics are now judged to hold half.) And before long they may venture into cakes as well.

Another formulation trend to keep tabs on: less wetting agent, more builder (like fast-moving polyphosphates).

MARKET LETTER

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	125.0	124.8	116.5
Bituminous coal production (daily average, 1000 tons)	1,760.0	1,750.0	1,682.0
Steel ingot production (thousand tons)	2,104.0	2,096.0	2,019.0
Stock price index of 14 chemical companies (Standard & Poor's Corp.)	229.2	228.0	222.2
Chemical process industries construction awards (Eng. News-Record)	$1,762,000	$14,662,000	$93,894,000

MONTHLY BUSINESS INDICATORS—TRADE (Millions)	MANUFACTURERS' SALES			MANUFACTURERS' INVENTORIES		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
All Manufacturing	$21,167	$22,267	$21,048	$41,957	$41,673	$33,253
Chemicals and allied products	1,404	1,486	1,468	3,047	3,030	2,356
Paper and allied products	599	657	649	1,004	959	732
Petroleum and coal products	1,951	2,092	1,831	2,515	2,566	2,219
Textile products	1,141	1,066	1,172	2,843	2,911	2,531
Leather and products	208	206	279	569	594	562

Not demand but phosphorus capacity is the limiting factor in the polyphosphate climb. Of this robust family, sodium tripoly has made the longest strides. Total use as late as 1947 was only a few million pounds. Now look at it: 600 million pounds last year, mostly for detergents.

Ethylene oxide expansion is riding a new wave of producer appeal. Mathieson Chemical has just brought in its $17 million plant at Doe Run, Ky., Solvay Division of Allied and Hancock Oil are expected to go on stream in 1953. Now Pittsburgh Coke & Chemical is looking into a suitable location for the same thing.

Where all this additional ethylene oxide will be sold stirs considerable interest. Doubtless much will end up in permanent anti-freeze, but acrylonitrile, nonionics, and ethanolamines will also press claims on the forthcoming supply.

A seasonal buying flurry in insecticides firmed up the DDT price position this week. One major producer—with a 4¢-a-pound increase—pulled up level with the others. Demand is also active for BHC and toxaphene, the other volume insecticide leaders.

But strong as the need is now, not much increase in capacity is looked for beyond the Hercules toxaphene expansion currently under way. Reason: Prospective producers want a second look at year-round demand.

Despite a paint sales slump in the latter half of the year, the industry squeaked through to a new record high. Total sales for about nine-tenths of the industry added up to an estimated $1.36 billion, some 6% ahead of 1950.

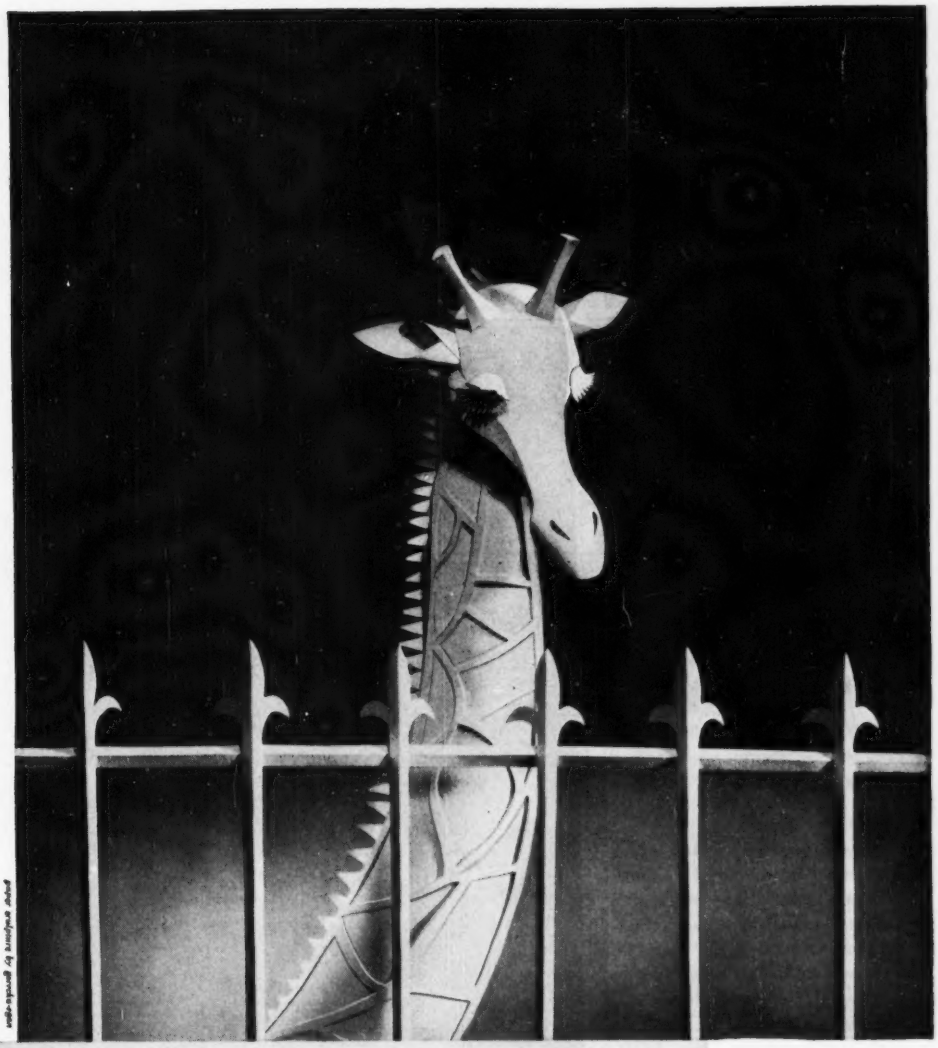
Formaldehyde supply already outruns demand, and the gap is more likely to widen than not. New production capacity this year will add 275 million pounds to the present 1.3 billion pounds of 37% formalin.

Producers are counting definitely on pentaerythritol to move some of this output. Two bright hopes: formaldehyde-based resins for foundry cores and wood waste bonding.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending March 3, 1952

	Change	New Price		Change	New Price
UP					
Agar-agar	$ .15	$1.35	DDT, tech., carlots	$ .04	$ .48
DOWN					
Linseed Oil, tanks	.005	.182			

All prices per pound unless quantity is stated



LONG ON EXPERIENCE

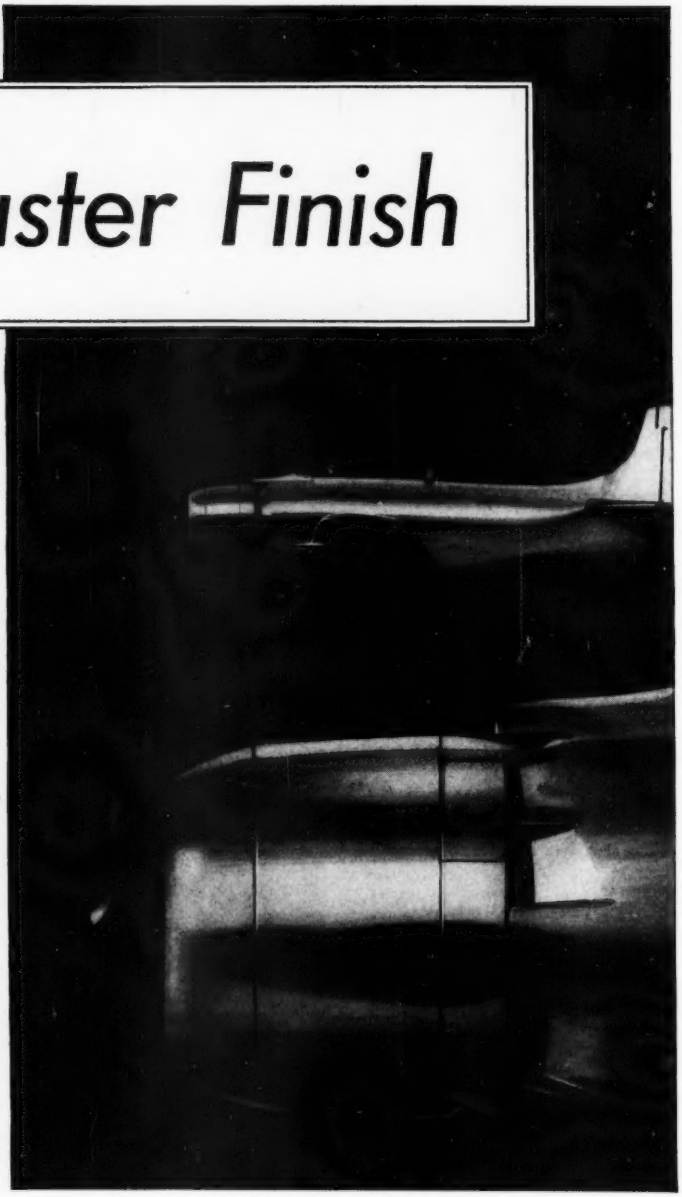
for over fifty years, NIAGARA has been producing top quality electro-chemicals... pioneering in the commercial production and application of a group of them.

NIALK®	Liquid Chlorine
NIALK	Caustic Potash
NIALK	Carbonate of Potash
NIALK	Paradichlorobenzene
NIALK	Caustic Soda
NIALK	TRICHLORethylene
NIAGATHAL®	(Tetrachloro Phthalic Anhydride)

NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, N. Y.

No Faster Finish



PROBLEM . . .

. . . finishes for aircraft and other military needs which can be applied fast, dry fast without baking, and stand up under severe service conditions.

SOLUTION . . .

. . . hot-spray lacquers now made by many companies from Hercules nitrocellulose. These new lacquers, thinned by heat rather than solvents, permit more actual lacquer to pass through the spray gun. Now, one hot coat frequently does the job where two coats had been used.

RESULT . . .

. . . faster production, and a better, longer-lasting finish. Important savings also are effected in materials as well as time. Douglas Aircraft Company, for example, reports finishing time reduced by 50% on AD-4 Navy planes . . . 2 gallons of lacquer and 8 gallons of thinner saved per plane. Adoption by the Military of hot-spray lacquer for ammunition, aircraft, tanks, buses, and other items acknowledges these benefits. *Write for information.*

Hercules' business is solving problems by chemistry for industry . . .

. . . insecticides, adhesives, soaps, detergents, plastics, paint, varnish, lacquer, textiles, paper, rubber, to name a few, use Hercules® synthetic resins, cellulose products, chemical cotton, terpene chemicals, rosin and rosin derivatives, chlorinated products, and other chemical processing materials. Hercules® explosives serve mining, quarrying, construction, seismograph projects everywhere

HERCULES

HERCULES POWDER COMPANY 992 Market St., Wilmington 99, Del.
Sales Offices in Principal Cities

052-8

New Resorcinol Resources

This year will see a 50% boost in resorcinol supply with new production by Heyden and Borden, expansion by major producer Koppers.

Supplies are still short, but the added production should bring a near balance with demand by end of the year.

Military demand won't grow much; defense orders will take smaller part of output; civilian customers will gain.

Little by little, the supply of resorcinol gets bigger and bigger. By the end of the year—if not before—almost all civilian buyers should be well provided for most of the time.

Such a situation hasn't been true since even before Korea. Resorcinol has been on allocation since last June, and military needs plus other defense orders have gobbled up what supplies were on hand.

But now many think that defense demand has just about hit its peak. New production coming along now and later this year means that consumers with less urgent applications will have their innings before another year goes by.

Some of these hopes flickered briefly last November when the military orders suddenly slacked off, and the leading producer, Koppers (Petrolia, Pa.) made no bones of the fact that scared-off, allocation-lacking buyers had to be found to take the output the Government couldn't use. Unfortunately, this boon was short-lived; since then defense needs have preempted all resorcinol in sight and have gone looking for more. In the opinion of NPA, the supply is still fairly critical, with allocations still taking the lion's share of output.

To encourage added production, DPA – NPA's big brother – last year granted rapid tax writeoffs (over 50%) on new facilities. With this new production, NPA now foresees notable easing in the status of resorcinol around the third quarter of this year. That's when the new units are expected to be complete and operating.

New and Growing: By that time, three will be making resorcinol. The new ones: Heyden, and Borden's Chemical Division. Heyden's plant at Garfield, N.J., rebuilt after being gutted by fire last year, is heading toward rated capacity—600 thousand pounds annually. Nor is the company shutting the door on further expansion. Koppers, still the largest producer by far, is not standing pat either: When its now a-building plant is completed about July, it will be able to turn out a total of about 6 million pounds a year.

The latest to say "count us in" is Borden's Chemical Division, now pushing ahead at Dominguez, Calif. on a plant scheduled for completion sometime this summer. Borden's plant is designed to make a million pounds a year.

California Bound: Borden's move has more than routine meaning. The company already has a sizable stake in the adhesives business, and now aims to strengthen its position by vertical integration. The West Coast seemed a likely place to start—close to markets and far from competition. Originally the intention was to build the plant at Tacoma, Wash., for next-door access to the Northwest lumber industry, a prime customer for resorcinol adhesives. This plan seemed like a natural, but fell through because of lack of scarce raw materials—benzene and sulfuric acid.

For this reason, the company switched to the Dominguez location, where it will be practically next door to Stauffer Chemical for acid, and close to a number of benzene suppliers in the Los Angeles area.

Other reasons have prompted Borden's move southward. For one thing, the plant will have better freight facilities, with all types of transport available. Also, most of the market is within hailing distance of the new plant site. Quite a few woodworking and furniture industries, plastics molders, and some major rubber fabricators operate less than forty miles away.

Means and Ends: Though the military needs have taken priority on resorcinol supply, producers are well aware that they can't bank heavily on such outlets in the future. About two-thirds of present output goes into defense industries for making adhesives, hard resins for rubber, and sizing for synthetic fiber tire cord. Uses less essential to defense—including pharmaceuticals and dyestuffs—have felt the past pinch most keenly. But with new production coming in, all the industrial users will stand to gain.

Thousands of facts to aid you in
CHEMICAL PLANT
Engineering
Operation
Management

USE this set of data-packed McGraw-Hill books as a real time-and-work-saving tool . . . as an up-to-date library of management, engineering, and operating facts that can help you quickly solve everyday problems. Here are thousands of clear, concise pointers on chemical calculations, economics, unit operations, industrial chemistry and materials of construction.

McGraw-Hill
CHEMICAL PLANT LIBRARY

5 volumes • 2359 pages • 975 illustrations
JAMES A. LEE, Consulting Editor
Prepared by a Staff of Experts

The fundamentals, methods, and data these books present are accurate, thorough, complete. The Library is the result of years of experience with chemical plant problems, *and the man who has it has the best.*

Shreve's Selected Process Industries
Pierce's Chemical Engineering for Production Supervision
Lee's Materials of Construction for Chemical Process Industries
Clarke's Manual for Process Engineering Calculations
Tyler's Chemical Engineering Economics

Gives You:
- A cross section of manufacturing procedures
- Tested facts on 300 different chemicals and foodstuffs
- Data to short-cut process engineering calculations
- Tips on the business side of chemical engineering
- On-the-job assistance in gaining peak efficiency
- Many "how to" helps

Ready reference in countless fields

Turn to it for today's latest procedures in manufacturing . . . for clear instructions in operating . . . for specific aid in selecting materials . . . for tested design data . . . or for scores of practical business helps.

SEE IT 10 DAYS FREE

McGraw-Hill Book Co., Inc.
330 W. 42nd St., New York 36

Send me the McGRAW-HILL CHEMICAL PLANT LIBRARY, 5 volumes, for 10 days' examination on approval. If the books prove satisfactory, I will remit $3.50 in 10 days and $4.00 monthly until $27.50 is paid. Otherwise I will return books postpaid.

(Print)
Name .....
Address .....
City ..... Zone.... State.....
Company .....
Position FCN-3-8-52

This offer applies to U. S. only.

Import Naphthalene Shaded

Naphthalene users this week are finding a slight drop in the range of prices asked by foreign importers. This may be due, in part, to the impact of the Office of Price Stabilization decision a month ago to allow higher ceilings on aromatics from coal tar.

The floor on napthalene import prices is still 10 cents per pound, but the quotation range has narrowed to less than a cent. It is still to early to foresee a drop in the floor price, but buyers, though not appreciably cutting back on purchases, consider this a strong possibility.

Meanwhile, a number of straws in the wind indicate a relatively normal supply-demand relationship by the end of 1953 or early in 1954:

• **Change in Tar.** Price encouragement from OPS will spur the trend towards further modification of coke oven operation. Varying the composition of coal mixtures, using higher coking temperatures and cutting down processing time has already resulted in a decrease of about 20% in total tar production but an increase of 40% in naphthalene content.

Big steel's expansion will, of course, contribute mightily to naphthalene supplies. Koppers, for example, has just received a 60% write-off on its $2,425,800 tar processing plant to be built at Fontana, Cal., and Barrett, 60% on $1,012,000 at Detroit. Government estimates foresee a 50% greater domestic production of naphthalene by 1954 when the steel expansion is complete.

• **Recovery Increase.** Both as a result of the price encouragement and of the longer-term increase in demand, producers are recovering a greater percentage of the naphthalene available in tar.

Some of this boost will come through plant modernization, but probably more from design improvements in new or additional recovery facilities, *viz.*, Barrett's Ironton, O., and Frankford, Pa., construction.

• **Ortho Xylene.** Production of phthalic anhydride from ortho xylene, now rapidly increasing, will relieve pressure on naphthalene—70% of which goes to phthalic. Anhydride manufacture from this product of petroleum hydroforming will be increasingly attractive—especially to non-integrated producers who depend on others for naphthalene. At least one producer who now buys naphthalene says that its facilities can be converted to use the xylene (*CW, Feb. 23*).

Another possibility for naphthalene manufacture, but one that is nebulous in both process and economics, is through coal hydrogenation. A 30,000 barrel-per-day plant could theoretically produce about 100 million pounds of naphthalene besides whopping amounts of other aromatics each year.

Such output, to say the least, could seriously depress prices (*CW, Oct. 20*), and thus change the amount of naphthalene coal tar processors would find it worthwhile to recover.

From the Record: While 1951 domestic naphthalene production increase to 350 million from 1950's 265 million, overall supplies available for each year stayed stationary—about 375 million. Imports, primarily from Europe, decreased in 1951 due largely to increased demands over there.

With increases in U.S. production, imports will play a smaller part in the overall supply picture—probably levelling off at 30-40 million pounds per year. For 1952, NPA forecasts that 426 million pounds of naphthalene will be available, but estimates demand at 503 million.

Right now, buyers have their fingers crossed. With profit margins declining, they would especially welcome a decrease in the cost of imported naphthalene.

Government Needs

Bid Closing	Invitation No.	Quantity	Item
General Services Administration, Federal Supply Service, Room 528 U.S. Courthouse, Chicago 4, Illinois.			
Mar. 12	WCH-51079	35255 cont	Soap, various kinds
		7200 lb	Powder, scouring
		4000 lb	Compound, for mechanical dishwasher
		156 tube	Paste, hand protective
		876 cont	Cleaner, various kinds
Commanding General New York Quartermaster, Procurement Agency, 111 East 16th St., New York, N.Y.			
Mar. 11	52-1145B	103020 lb	Soap powder (2½ lb pkg.) spec. P-S-606A
Commanding General, Fort McPherson, Georgia			
Mar. 10	9-177-52-21	66055 gal	Wax, floor, water emulsion, Fed. spec. PW151-A in 55 gal. drums

tracers...

to opportunities in the Chemical Process Industries

MANAGEMENT SERVICES

Colburn Laboratories, Inc.

Research Chemists
- New Product Development
- Organic Synthesis and Research
- Non-routine Analytical Work

732 S. Federal St. Chicago 5, Ill.

Evans

Chemical Research—Processes—Products
Development Problems
Complete Laboratory—Pilot Plant
Mechanical & Optical Sections
Ask for new Scope Sheet C
listing over 100 of our activities
EVANS RESEARCH & DEVELOPMENT CORP.
250 East 43rd St., N. Y. 17, N. Y.

SPECIAL SERVICES

Processes

Processes for conversion of natural and insoluble phosphates into soluble modifications as required for fertilizers and other uses. Sulfuric Acid not required. SS-3442, Chemical Week.

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

Position Vacant

Chemical Engineers for process engineering, design and development with large progressive chemical company. Location northern West Virginia. Can use both experienced and recent graduates. Write giving full details to P-3501, Chemical Week.

Selling Opportunity Offered

Agents and Distributors wanted in various territories by established manufacturer to sell line of bulk chemicals and specialties to textile and paper mills, laundries, tanneries, soap and wax product manufacturers, metal finishers. RW-3517, Chemical Week.

Position Wanted

Sales Executive—13 years experience—past 5 years organized own sales company, handling chemical process equipment. Silent partner—Internal Revenue took all the profits. Wants position Sales Management with concern serving chemical industry. Detailed qualifications on request. Now located Midwest. Will move. Reply PW-3535, Chemical Week.

EQUIPMENT — used - surplus

For Sale

Calenders, New Rubber Calenders, 6x12", Johnson joints, 7½ HP motor, Complete. Eagle Industries, 110 Washington St., NYC.

Centrifugal, 36"x40", Bird, Continuous, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugals, Bird Rubber Covered. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Centrifugals 40" Evendur. First Machinery Corp., 157 Hudson St., New York 13.

For Sale

Condensers, Coil, St. St., 40 sq. ft. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Crystallizers, Swenson Jktd. First Machinery Corp., 157 Hudson St., New York 13.

Drives—1½ HP to 10 HP—Foote & Nettco— 20 RPM to 70 RPM. Chemical & Process Machinery Corp., 146 Grand St., New York 13, NY

Dryer, SS Spray Bowen 7'x8½' complete unit. Equipment Clearing House, 289 10 St., Bklyn 15.

Dryer, Vacuum Shelf, 44"x44" shelves, MD pumps, complete. Eagle Industries, 110 Washington St., NYC.

Dryers, Beaird Challenger 4'x27' dryers complete, gas fired, one oil fired. Chemical & Process Machinery Corp., 146 Grand St., New York 13.

Dryers, Stainless Drum 5'x10'. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Evaporators, Multiple Effect. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Filter, Sweetland #5, 29 leaves. Perry Equip. 1415 N. 6th St., Phila. 22, Pa.

Filter Press, 24"x24", aluminum, 24 chambers, Consolidated Prods., 18 Park Row, N.Y. 38.

Filter Press, 30"x30", iron, Sperry, steam heated. 30 chambers, Consolidated Products. 18 Park Row, N.Y. 38, N.Y., Barclay 7-0600.

Filter Presses, all sizes and types. Process Industries, 305 Powell St., Brooklyn 12, N.Y.

Kettle, Reaction, 12 gal. inconel, Jktd. & Agit. Perry Equip., 1415 N. 6th St., Phila. 22.

Kettle, Steel Jack. w/Agitator, 1000 gals. R. Gelb & Sons, Union, New Jersey.

Mill, Ball Hardinge 4½'x2'. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Mill, New Rubber Mills, 6x12, 6x14, 6x16"; Johnson joints, Complete. Eagle Industries, 110 Washington St., N.Y.C.

Mixer, 110 gal. stainless Patterson Vacuum, Consolidated Prods., 18 Park Row, N.Y. 38.

Mixer, 200 gallon B.P. Jacketed, m.d., Consolidated Products, 18 Park Row, N.Y. 38.

Mixer, Lab BP Vacuum, 7½ gal, jktd, MD, Complete. Eagle Industries, 110 Washington St., NY.

Moisture Separator. Manufacturer has available for immediate delivery one (1) Moisture Separator for removal of liquid droplets from gas stream. Capacity up to 6,000 C.F.M. depending on liquid concentration. Unit will not be sold without approval by our Engineering Department as to proper application. Construction of ¼" chemical lead and cage type steel reinforcement. Inquirers should state gas volume, temperature, composition and amount of liquid entrainment. FS-3492, Chemical Week.

Pebble Mills; 8'x8', Porcelain lined. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebbles-Flint Grinding, imported from France and Belgium. Several large lots available in original bags. Will sell at sacrifice due to necessity of vacating warehouse. Write FS-3439, Chemical Week.

Pulverizer, Raymond High Side 5 roll, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Pulverizers, Mikro #1-SH & #2-TH. R. Gelb & Sons, Inc., Union, New Jersey.

Tablet Press, Stokes DD2, 23 punch, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Tank, Aluminum, 43,400 gal. New. Perry Equip. Co., 1415 N. 6th St., Phila. 22, Pa.

Tank, Evedur, Vacuum, 2000 gals. R. Gelb & Sons, Inc., Union, New Jersey.

Tank. New 20,000 Gal. Cap. 5/16 Steel 6 available. L. M. Stanhope, Rosemont, Pa.

Tank, Stainless, Type 316, 1500 gals. R. Gelb & Sons, Inc., Union, New Jersey.

Tank, S/S, 3,000 gal. for truck. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tank, 5700 gal., S/S, Horiz., New. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

For Sale

Tanks (2) St. St., 16,000 gal. Vert. New. Perry Equip. Co., 1415 N. 6th St., Phila. 22.

Tanks, SS, from 180-10000 gal, jktd. storage, agtd. Eagle Industries, 110 Washington St., NYC.

Tanks, S.S. Storage & Mixing, all capacities. Process Industries, 305 Powell St., B'klyn 12.

Tanks, Steel, 8,000 & 16,000 gals. R. Gelb & Sons, Inc., Union, New Jersey.

Tower Fractionating 24"x51', First Machinery Corp., 157 Hudson St., N. Y. 13.

Vacuum Reactors, 2500 gallon steel agitated closed. Chemical & Process Machinery Corp., 146 Grand St., New York 13, N.Y.

Valves, Saunders Patent, Series 100 1½" flanged, stainless, new, low price. Columbia Machinery & Equip. Co., Alexandria, Va.

Wanted

Filters, Filter Presses, all makes and sizes. R. Gelb & Sons, Inc., Union, N.J.

Kettles, glass lined and stainless — 10 to 5000 gal cap. R. Gelb & Sons, Inc., Union, N.J.

Machinery, Chemical and Process. Everything from single item to complete plant. Consolidated Products, 18 Park, N.Y. 38.

Mixers, Centrifuges, Pulverizers, Evaporators. R. Gelb & Sons, Inc., Union, N.J.

Wanted at Once

Chemical Equipment for Defense Plant Work

Autoclaves	Kettles
Centrifuges	Mixers
Dryers	Presses
Filters	Pulverizers
	Tanks

Interested in complete plants—either now operating or idle. Give full particulars when writing.

W 3117 Chemical Week
330 W. 42nd St., N.Y. 36, N.Y.

WANTED To Expedite Production

PROCESS MACHINERY INCLUDING:

Vacuum Dryers	Columns
Heavy Duty Mixers	Pulverizers
Reaction Kettles	Packaging and Wrapping Equipment
Rotary Filters	8/8 and non-corrosive Storage Tankage
Filter Presses	

Will consider set up plant now operating or shut down. When offering give full particulars.

P. O. Box 1351
Church Street Sta.
New York 8, N. Y.

BUSINESS OPPORTUNITIES

Equity Financing?

Inquiries invited from new or established, closely held or family-owned concerns seeking public participation.
Situations requiring $250,000 or over preferred.

Graham Ross & Co., Inc.
Underwriters and Distributors
82 Beaver St., N. Y. 5, N. Y.

DEALERS in used-surplus

Consolidated Products Co., Inc.

Over 35 years of service buying and selling to the Chemical & Process Industries.

18 Park Row, New York 38, N.Y.
BArclay 7-0600

Shops: 331 Doremus Ave., Newark 2, N. J.

For Sale

Your FIRST Source

NEW YORK'S
LARGEST STOCK
RENTAL-PURCHASE PLAN
FIRST MACHINERY CORP.
157 Hudson St., N. Y. 13
Phone WORTH 4-5900

R. Gelb & Sons, Inc.

Largest stock of used chemical equipment in the United States.
Established 1886
66 years of leadership.

Agitators	Mills
Centrifugals	Crushers
Crystallizers	Dryers
Evaporators	Fillers
Filters	Presses
Kettles	Kilns
Mixers	Pumps
Screens	Tanks

R. Gelb & Sons, Inc.
Union, N. J.
UNionville 2-4900

CHEMICALS

For Sale

Ethylene, Propylene Glycol, Carload or less, prompt. Tobey Chemical Co., 1480 B'way, N.Y.C.

Silica Gel & Sponges For Sale

Will dispose of approximately 2400 pounds Davison Chemical Company's Blue Silica Gel, below market prices; also approximately 37,000 small Dupont Cellulose Sponges, 3¼ inches by 1 inch, ⅛ inch in thickness. Ideal for applicators on various cleaning specialties; below cost.

ZEEN CHEMICAL COMPANY
2000 Elm St., Cleveland 13, Ohio

Wanted

Chemical Service Corporation

WILL BUY

Cancelled — Unshipped — Rejected or Overstocked

Chemicals-Drugs-Solvents
Pharmaceuticals-Oils-Pigments, etc.

CHEMICAL SERVICE CORPORATION
96-02 Beaver Street
New York 5, N. Y.
HAnover 2-6970

PLANTS—PROPERTIES

Wanted

Wanted To Lease Plant, for compounding chemical specialties; railroad siding, trucking platform, heated, equipped or unequipped, 20 to 40,000 sq. feet, northeast New Jersey. W-3536, Chemical Week.

tracers information

RATES: Undisplayed: $1.00 per line (½ for positions wanted)
Displayed: $10.00 per column inch (low contract rates available)

CLOSING DATE: Wed. for issue dated Sat. following week.

BOOKLETS . . . . . .

Chemicals

Concrete Admix

16-p. bulletin devoted to "Hydropel," an admix designed to improve Portland cement concrete and mortars, primarily by means of its action against moisture difficulties. Booklet reviews the compound's physical characteristics, uses, and procedures for mixing, curing and testing. American Bitumuls Co., 200 Bush St., San Francisco, Cal.

Vinylite Dispersion Resins

16-p. booklet on formulations of Vinylite dispersion resins known as "plastigels," covers their development, preparation, flow properties, formulation, and applications in processes such as tubing and sheeting, calendering and hand modeling, in addition to their use in potting compounds and dip coatings. Bakelite Co., 122 East 42nd St., New York, N. Y.

Mildewproofing Agents

12-p. technical service report on mildewproofing agents presents methods used for mildewproofing materials, products used for this purpose, along with abstracts of many of Government Specifications on mildewproofing requirements. Emphasis here is on 8 per cent copper naphthenate and other chemicals with respect to Government Specifications. Witco Chemical Co., 295 Madison Ave., New York, N. Y.

Industrial and Pharmaceutical Chemicals

16-p. catalog listing line of chemicals offered by the firm in its role as distributors of bulk chemicals. R. W. Greeff & Co., Inc., 10 Rockefeller Plaza, New York, N. Y.

Equipment

Resistance Thermometers

36-p. catalog entitled "Thermohms, Assemblies, Parts and Accessories," reviews firm's line of general-purpose and specialized resistance thermometers. Tabular guide is featured to aid in the selection of the proper Thermohm for its various applications in the chemical, food and drug, glass, iron and steel industries, etc. Leeds & Northrup Co., 4907 Stenton Ave., Philadelphia, Pa.

Belt Conveyors

42-p. catalog covering various types of belt conveyors making up the firm's "Redi-Fab Series," that segment of the firm's conveyor line which is most called for and has therefore been "packaged" together. Information is given concerning design principles, selection, layout, and uses. Barber-Greene Co., Aurora, Ill.

Rheostats and Resistors

16-p. catalog giving information on the construction, specifications and particular uses of the firm's line of tubular rheostats, potentiometers, resistors, double rheostats and resistors, etc. Rex Rheostat Co., Baldwin, L. I., N. Y.

Water Conditioning

20-p. bulletin discussing various methods of conditioning water and the purposes served by each. Individual sections are devoted to zeolites, ion exchange resins, ultra-deionizer, filters and purifiers, degasitators, and water treating chemicals. Elgin Softener Corp., Elgin, Ill.

Beta Gauge

8-p. bulletin covering the main features, operating principles and performance of "AccuRay" beta gauge, a device used in the rubber and plastics industries for giving direct square yard weight readings of calendered fabrics and sheet materials on production lines. Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus, Ohio.

Continuous Sampling Monitor

4-p. bulletin describing and illustrating the operation, construction and range of firm's continuous sampling monitor, a device designed to simplify quality control. General Electric Co., Schenectady, N. Y.

CHEMICAL WEEK • ADVERTISER'S INDEX • MARCH 8, 1952

AMERICAN FLANGE & MFG. CO., INC. 39
Agency—Freiwald & Coleman
ANTARA CHEMICALS, A DIVISION OF GENERAL DYESTUFF CORP. 37
Agency—J. Hayden Twiss, Advertising
ARCHER, DANIELS, MIDLAND CO. 38
Agency—The Bayless-Kerr Co.
BARRETT DIVISION, ALLIED CHEMICAL & DYE CORP. 40
Agency—McCann-Erickson, Inc.
BROWN COMPANY 3
Agency—J. M. Mathes, Inc.
BUFFALO FORGE CO. 34
Agency—Melvin F. Hall Advertising Agency
CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP. Back Cover
Agency—J. M. Mathes, Inc.
CARLISLE CHEMICAL WORKS, INC. T41
Agency—
COLUMBIA-SOUTHERN CHEMICAL CORP. 23
Agency—Ketchum, McLeod & Grove, Inc.
CONTINENTAL CAN CO. 47
Agency—Batten, Barton, Durstine & Osborne, Inc.
COOK ASSOCIATES, INC., W. MILLER T46
Agency—Irving L. Braun, Advertising
DODGE & OLCOTT, INC. 14
Agency—Peck Advertising Agency, Inc.
DOW CHEMICAL CO., THE 19
Agency—MacManus, John & Adams, Inc.
DOW CORNING CORP. 26
Agency—Don Wagnitz, Advertising
EASTMAN KODAK CO. 5
Agency—Charles L. Rumrill & Co., Inc.
EIMCO CORP., THE 1
Agency—Matsie Co.
EXOLON COMPANY 32
Agency—Melvin F. Hall Advertising Agency
FISHER CHEMICAL COMPANY, INC. T18
Agency—Freiwald & Coleman
FOOD TECHNOLOGY, INC. B18
Agency—Bachrodt, Newell, O'Kane & Gano, Inc.
GOODYEAR CHEMICAL DIVISION 20
Agency—Kudner Agency
GREEFF & COMPANY, INC., R. W. T44
Agency—J. Hayden Twiss
HARDINGE COMPANY, INC. 2
Agency—The W. H. Long Co.
HARSHAW CHEMICAL CO., THE 6
HERCULES POWDER CO. 52
Agency—Fuller & Smith & Ross, Inc.
HINDE & DAUCH 36
Agency—Howard Swink Advertising Agency
HOOKER ELECTROCHEMICALS CO. 25
Agency—Charles L. Rumrill & Co., Inc.
INTERNATIONAL MINERALS & CHEMICAL CORP. 30
Agency—C. Franklin Brown, Inc.
KANO LABORATORIES B31
Agency—Bachrodt, Newell, O'Kane & Gano, Inc.
KRAFT BAG CORP. 33
Agency—Arthur A. Judson, Inc.
McGRAW-HILL BOOK CO., INC. 53
MERCOID CORP. B41
MICHEL & CO., INC., M. T31
MOORE & MUNGER 27
Agency—Asher, Godfrey & Franklin, Inc.
NATIONAL ADHESIVES 43
Agency—G. M. Basford Co.
NIAGARA ALKALI CO. 51
Agency—Hazard Advertising Co.
NOPCO CHEMICAL CO. 24
Agency—Lewin, Williams & Saylor, Inc.
ORONITE CHEMICAL CO. 17
Agency—L. C. Cole Company
PELAMAY PRODUCTS B13
Agency—Diener & Dorskind, Inc.
PHILIPP BROTHERS, INC., METALS & CHEMICALS 48
Agency—Arlington Advertising Agency
POTDEVIN MACHINE CO. T13
Agency—S. Bass & Co., Inc.
QUAKER OATS CO., THE 42
Agency—Rogers & Smith, Advertising
REICHHOLD CHEMICALS, INC. 3rd Cover
Agency—MacManus, John & Adams, Inc.
RICHES-NELSON, INC. B44
Agency—Givaudan Advertising, Inc.
SHELL CHEMICAL CORP. 15
Agency—J. Walter Thompson Co.
SYL MFG. CO., W. W. 21
Agency—The Bayless-Kerr Co.
UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS CO. Back Cover
Agency—J. M. Mathes, Inc.
VANDERBILT CO., R. T. 16
Agency—The Publication Services, Inc.
VICTOR CHEMICAL WORKS 35
Agency—Cruttenden & Eger Advertising
WAX & ROSIN PRODUCTS T4
WESTINGHOUSE ELECTRIC CORP. 28 & 29
Agency—Fuller & Smith & Ross, Inc.
WESTVACO CHEMICAL DIVISION, FOOD MACHINERY & CHEMICAL CORP. 2nd Cover
Agency—James J. McMahon, Inc.
WILLSON PRODUCTS, INC. 22
Agency—Beaumont, Heller & Sperling, Inc.
WINTHROP-STEARNS, INC. 84
Agency—Robert W. Rodman, Advertising

ADVERTISING STAFF

ADVERTISING SALES MGR. . . B. E. Sawyer

BUSINESS MANAGER . . . . Albert E. Weis

Atlanta 3 . . . . . Ralph C. Maultsby, 1321 Rhodes-Haverty Bldg.

Chicago 11 . . . . . Alfred D. Becker, Jr. Steven J. Shaw, 520 N. Michigan Ave.

Cleveland 15 . . . . . Vaughan K. Dissette, 1510 Hanna Bldg.

Dallas 1 . . . . James Cash, First National Bank Bldg.

Los Angeles 17 . . . . . Jos. H. Allen, 1111 Wilshire Blvd.

New York 36 . . . . . Knox Armstrong, Robert S. Muller, Charles L. Todaro, 330 West 42 St.

Philadelphia 3 . . . . William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts.

San Francisco 4 . . . . . Ralph E. Dorland, 68 Post St.

Boston 16 . . . . . 1427 Statler Bldg.

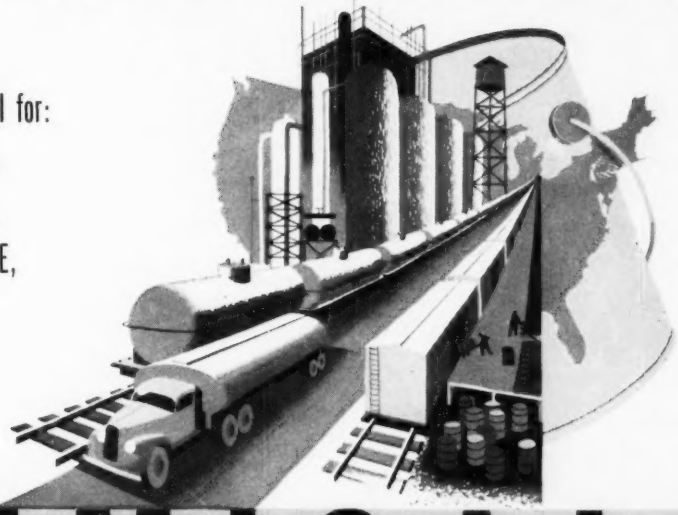
Detroit 26 . . . . . 856 Penobscot Bldg.

Pittsburgh 22 . . . . . 738 Oliver Bldg.

St. Louis 8 . . . . . 3615 Olive St., Continental Bldg.

REICHHOLD

Have You Checked RCI for:
PHENOL, GLYCERINE,
MALEIC ANHYDRIDE,
PHTHALIC ANHYDRIDE,
SODIUM SULFATE,
SODIUM SULFITE?



CHEMICALS

● In order to assure a steady supply of top quality raw materials to its many plants all over the world, Reichhold has developed its own facilities for producing the basic chemicals listed above. Thanks to modern production methods and equipment plus a far-sighted expansion program, Reichhold has become a major producer of these vital chemicals . . . frequently able to share its production with other industries. If you need phenol, glycerine, maleic anhydride, phthalic anhydride, sodium sulfate or sodium sulfite, keep in touch with Reichhold. For current availabilities, write, wire or phone the Chemical Department.

See "America's Town Meeting" on TV every Sunday on ABC presented by Reichhold as a public service.

REICHHOLD CHEMICALS, INCORPORATED
630 Fifth Avenue, New York 20, New York

RCI

'Round the World to Serve you Better

Plants: Detroit, Mich. • Brooklyn, N. Y. • Elizabeth, N. J. • South San Francisco and Azusa, Calif. • Tuscaloosa, Alabama • Seattle, Wash. • Chicago, Illinois Charlotte, N. C. • Liverpool, England • Paris, France • Sydney, Australia • Hamburg, Germany • Naples, Italy • East London, South Africa • Barcelona, Spain Wendorf, Austria • Buenos Aires, Argentina • São Paulo, Brazil • Sassenheim and Apeldoorn, Holland • Toronto, Port Moody, and Montreal, Canada Osaka, Japan • Gothenburg, Sweden • Zurich, Switzerland

Give the User what she wants..

Water-Resistant Polishes

MADE WITH CARBIDE'S MORPHOLINE

You can also use Morpholine in — **PAPER COATINGS • SHOE POLISHES • WATER PAINTS**

Oil and wax emulsions are *easily made* with morpholine soaps and have excellent shelf-life. Morpholine does not boil off selectively during preparation and does not evaporate in storage. After application it evaporates gradually along with the water, leaving the oil or wax film resistant to water-spotting.

Good corrosion inhibitor too—Morpholine effectively stops corrosion due to dissolved carbon dioxide in return condensate lines in steam heating systems.

An intermediate—Morpholine is an intermediate for rubber accelerators and carbon-remover compounds.

CARBIDE AND CARBON CHEMICALS COMPANY

A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.

Offices in Principal Cities
In Canada:
Carbide and Carbon Chemicals, Limited, Toronto

Other amines available for use in emulsions include the three ethanolamines and four isopropanolamines. For information, samples, or prices, call or write the nearest Carbide office.